ALESIS
Q20 (Q3)
Service Manual

P/N: 8-31-0080-A

Preface

This document is intended to assist the service technician in the operation, maintenance and repair of the Alesis device. Together with the User Reference Manual, this document provides a complete description of the functionality and serviceability of the Device. Any comments or suggestions you may have pertaining to the document are welcome and encouraged.

READ THIS!

In addition to any purchase price that Alesis may charge as consideration for Alesis selling or otherwise transferring this service manual ("Manual") to you, if you are not a service and repair facility ("Service Center") authorized by Alesis in writing to be an authorized Service Center, Alesis sells or transfers the Manual to you on the following terms and conditions:

Only Service Centers authorized by Alesis in writing are authorized to perform service and repairs covered by an Alesis warranty (if any), and transfer of the Manual to you does not authorize you to be an authorized Service Center. **Therefore, if you perform, or if the Manual is used to perform, any service or repairs on any Alesis product or part thereof, any and all warranties of Alesis as to that product and any service contract with Alesis for that product shall be voided and shall no longer apply for such product, even if your services or repairs were done in accordance with the Manual.**

All service or repairs done by you or with reference to the Manual shall be solely your responsibility, and Alesis shall have no liability for any such repairs or service work. **All such service or repairs are performed at the sole risk of the person performing the service or repairs.** You agree that all such work will be performed in a competent, professional and safe manner at all times and to indemnify and fully hold Alesis and its successors and assigns harmless in the event of any failure to so perform.

Your purchase of the Manual shall be for your own ultimate use and shall not be for purposes of resale or other transfer.

As the owner of the copyright to the Manual, Alesis does not give you the right to copy the Manual, and you agree not to copy the Manual without the written authorization of Alesis. Alesis has no obligation to provide to you any correction of, or supplement to, the Manual, or any new or superseding version thereof.

Alesis shall have the right to refuse to sell or otherwise transfer repair parts or materials to you in its sole discretion. You shall not use, sell or otherwise transfer spare or replacement parts supplied by Alesis to you (i) to repair or be used in products manufactured for or by third parties or (ii) to any third parties for any purpose.

You shall not make any warranties or guarantees with respect to the products of Alesis or the use thereof on behalf of Alesis or in your own name.

The foregoing describes the entire understanding related to sale or transfer of the Manual to you, and no other terms shall apply unless in a writing signed by an authorized representative of Alesis.

Warnings

TO REDUCE THE RISK OF ELECTRIC SHOCK OR FIRE, DO NOT EXPOSE THIS PRODUCT TO WATER OR MOISTURE.

The arrowhead symbol on a lightning flash inside a triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the enclosed product which may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point inside a triangle is intended to alert the user to the presence of important operating, maintenance and servicing instructions in the literature which accompanies the product.

REPAIR BY ANY PERSON OR ENTITY OTHER THAN AN AUTHORIZED ALESIS SERVICE CENTER WILL VOID THE ALESIS WARRANTY.

PROVISION OF THIS MANUAL DOES NOT AUTHORIZE THE RECIPIENT TO COMPETE WITH ANY ALESIS DISTRIBUTOR OR AUTHORIZED REPAIR SERVICE CENTER IN THE PROVISION OF REPAIR SERVICES OR TO BE OR MAKE REPAIRS AS AN AUTHORIZED SERVICE CENTER.

ALL REPAIRS DONE BY ANY ENTITY OTHER THAN AN AUTHORIZED ALESIS SERVICE CENTER SHALL BE SOLELY THE RESPONSIBILITY OF THAT ENTITY, AND ALESIS SHALL HAVE NO LIABILITY TO THAT ENTITY OR TO ANY OTHER PARTY FOR ANY REPAIRS BY THAT ENTITY.

Regarding the Power Supply Fuse

CAUTION: The product under service may employ the use of a replaceable fuse. Danger of fire or electrocution if fuse is incorrectly replaced. Replace with only the same type or equivalent type recommended by the equipment manufacturer.

Safety Suggestions

Carefully read the applicable items of the operating instructions and these safety suggestions before using this product. Use extra care to follow the warnings written on the product itself and in the operating instructions. Keep the operating instructions and safety suggestions for reference in the future.

1. Power Source. The product should only be connected to a power supply which is described either in the operating instructions or in markings on the product.

2. Power Cord Protection. AC power supply cords should be placed such that no one is likely to step on the cords and such that nothing will be placed on or against them.

3. Periods of Non-use. If the product is not used for any significant period of time, the product's AC power supply cord should be unplugged from the AC outlet.

4. Foreign Objects and Liquids. Take care not to allow liquids to spill or objects to fall into any openings of the product.

5. Water or Moisture. The product should not be used near any water or in moisture.

6. Heat. Do not place the product near heat sources such as stoves, heat registers, radiators or other heat producing equipment.

7. Ventilation. When installing the product, make sure that the product has adequate ventilation. Improperly ventilating the product may cause overheating, which may damage the product.

8. Mounting. The product should only be used with a rack which the manufacturer recommends. The combination of the product and rack should be moved carefully. Quick movements, excessive force or uneven surfaces may overturn the combination which may damage the product and rack combination.

9. Cleaning. The product should only be cleaned as the manufacturer recommends.

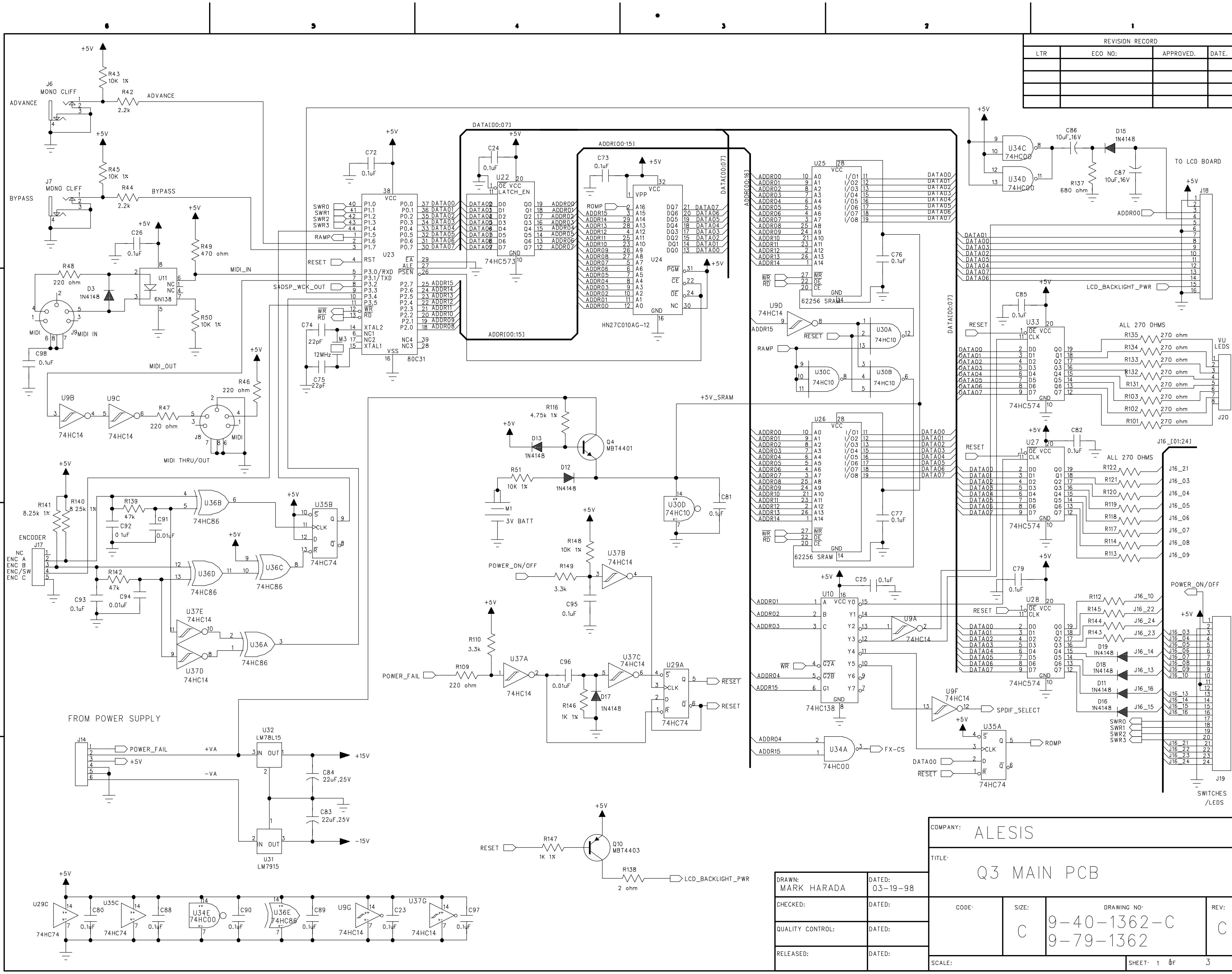
10. Service. The user should only attempt the limited service or upkeep specifically described in the operating instructions for the user. For any other service required, the product should be taken to an authorized service center as described in the operating instructions.

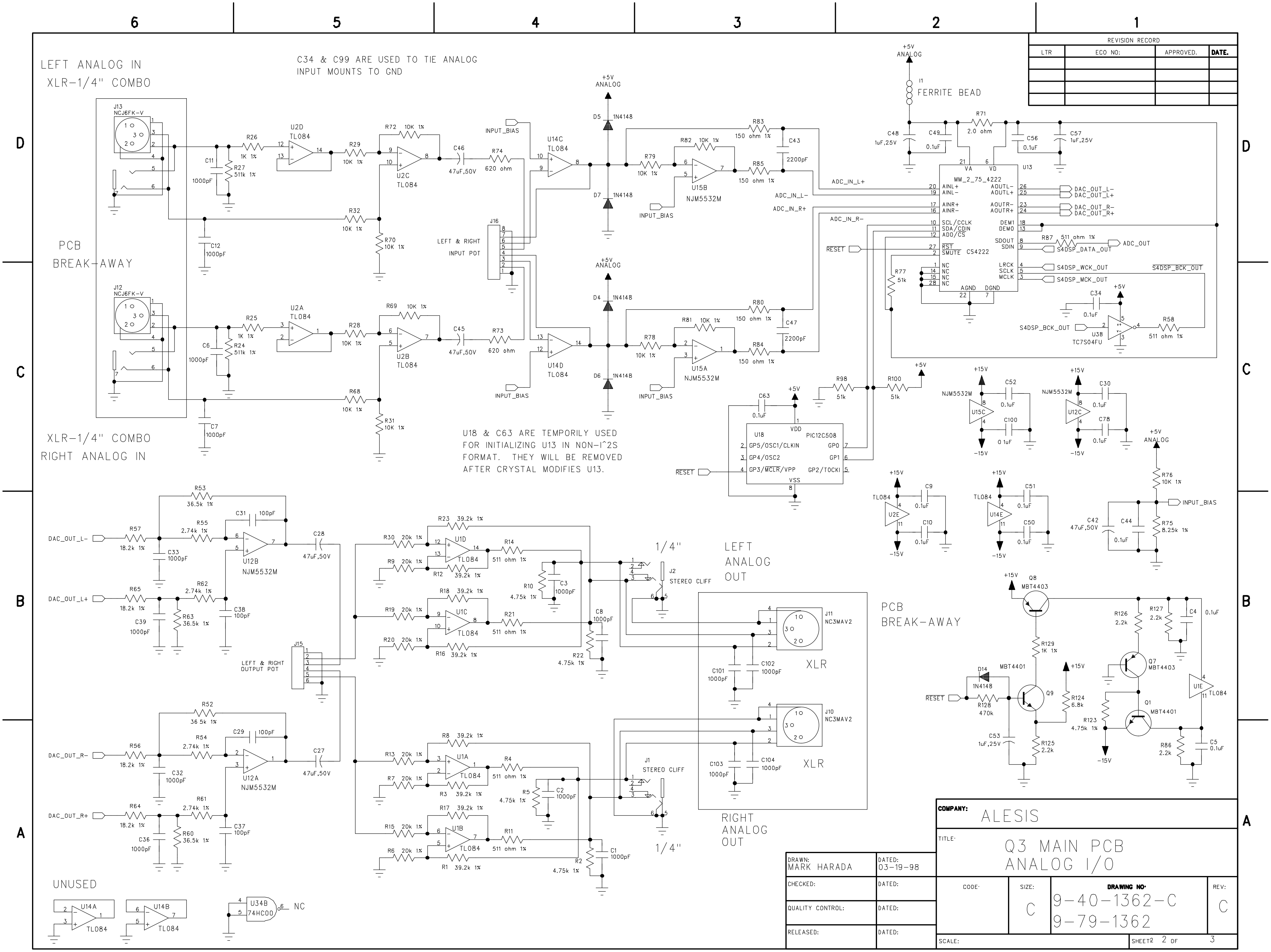
11. Damage to the Product. Qualified service personnel should service the unit in certain situations including without limitation when:
    a. Liquid has spilled or objects have fallen into the product,
    b. The product is exposed to water or excessive moisture,
    c. The AC power supply plug or cord is damaged,
    d. The product shows an inappropriate change in performance or does not operate normally, or
    e. The enclosure of the product has been damaged.

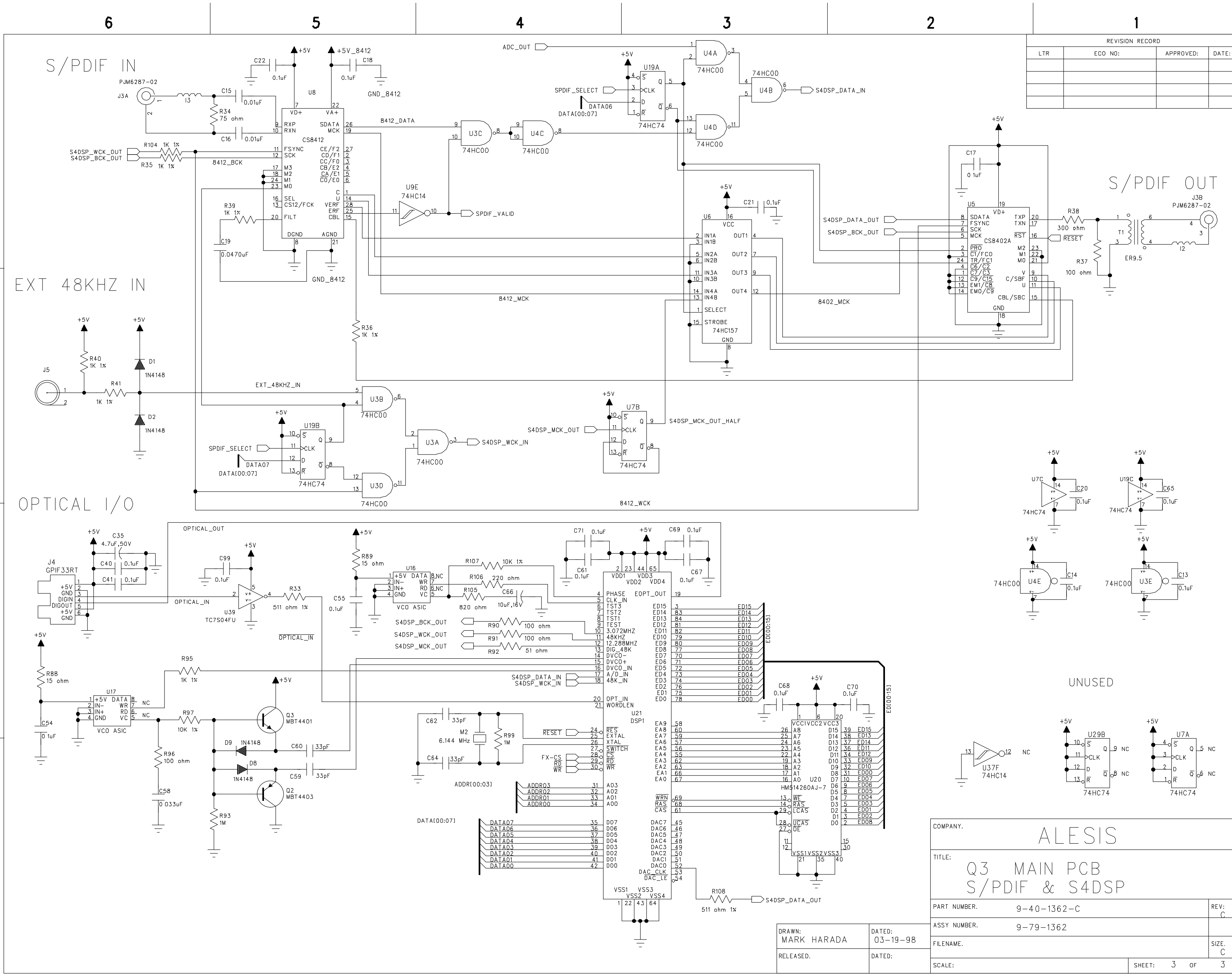
ALESIS
Q20 (Q3)

SCHEMATIC
AND
PCB
FILES

Q20 Main PCB
Rev C


REVISION RECORD
LTR
ECO NO:
APPROVED.
DATE.
TO LCD BOARD
FROM POWER SUPPLY
MIDI IN
MIDI THRU/OUT
ENCODER
VU LEDS
SWITCHES /LEDS
ALL 270 OHMS
U23 80C31
U22 74HC573
U24 HN27C010AG-12
U25 62256 SRAM
U26 62256 SRAM
U33 74HC574
U27 74HC574
U28 74HC574
U10 74HC138
U32 LM78L15
U31 LM7915
M1 3V BATT
Q4 MBT4401
Q10 MBT4403
COMPANY: ALESIS
TITLE: Q3 MAIN PCB
DRAWN: MARK HARADA
DATED: 03-19-98
CHECKED:
QUALITY CONTROL:
RELEASED:
CODE:
SIZE: C
DRAWING NO: 9-40-1362-C
9-79-1362
REV: C
SCALE:
SHEET: 1 OF 3


LEFT ANALOG IN
XLR-1/4" COMBO
C34 & C99 ARE USED TO TIE ANALOG
INPUT MOUNTS TO GND
PCB
BREAK-AWAY
XLR-1/4" COMBO
RIGHT ANALOG IN
U18 & C63 ARE TEMPORILY USED
FOR INITIALIZING U13 IN NON-I^2S
FORMAT. THEY WILL BE REMOVED
AFTER CRYSTAL MODIFIES U13.
LEFT & RIGHT
INPUT POT
FERRITE BEAD
MM_2_75_4222
CS4222
PIC12C508
INPUT_BIAS
ADC_IN_L+
ADC_IN_L-
ADC_IN_R+
ADC_IN_R-
DAC_OUT_L-
DAC_OUT_L+
DAC_OUT_R-
DAC_OUT_R+
ADC_OUT
S4DSP_DATA_OUT
S4DSP_WCK_OUT
S4DSP_BCK_OUT
S4DSP_MCK_OUT
RESET
LEFT & RIGHT
OUTPUT POT
1/4"
LEFT
ANALOG
OUT
STEREO CLIFF
XLR
PCB
BREAK-AWAY
RIGHT
ANALOG
OUT
UNUSED
NC
REVISION RECORD
LTR
ECO NO:
APPROVED.
DATE.
COMPANY: ALESIS
TITLE: Q3 MAIN PCB
ANALOG I/O
DRAWN: MARK HARADA
DATED: 03-19-98
CHECKED:
DATED:
QUALITY CONTROL:
DATED:
RELEASED:
DATED:
CODE:
SIZE: C
DRAWING NO: 9-40-1362-C
9-79-1362
REV: C
SCALE:
SHEET 2 OF 3



REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

COMPANY. ALESIS

TITLE: Q3 MAIN PCB S/PDIF & S4DSP

PART NUMBER. 9-40-1362-C REV: C

ASSY NUMBER. 9-79-1362

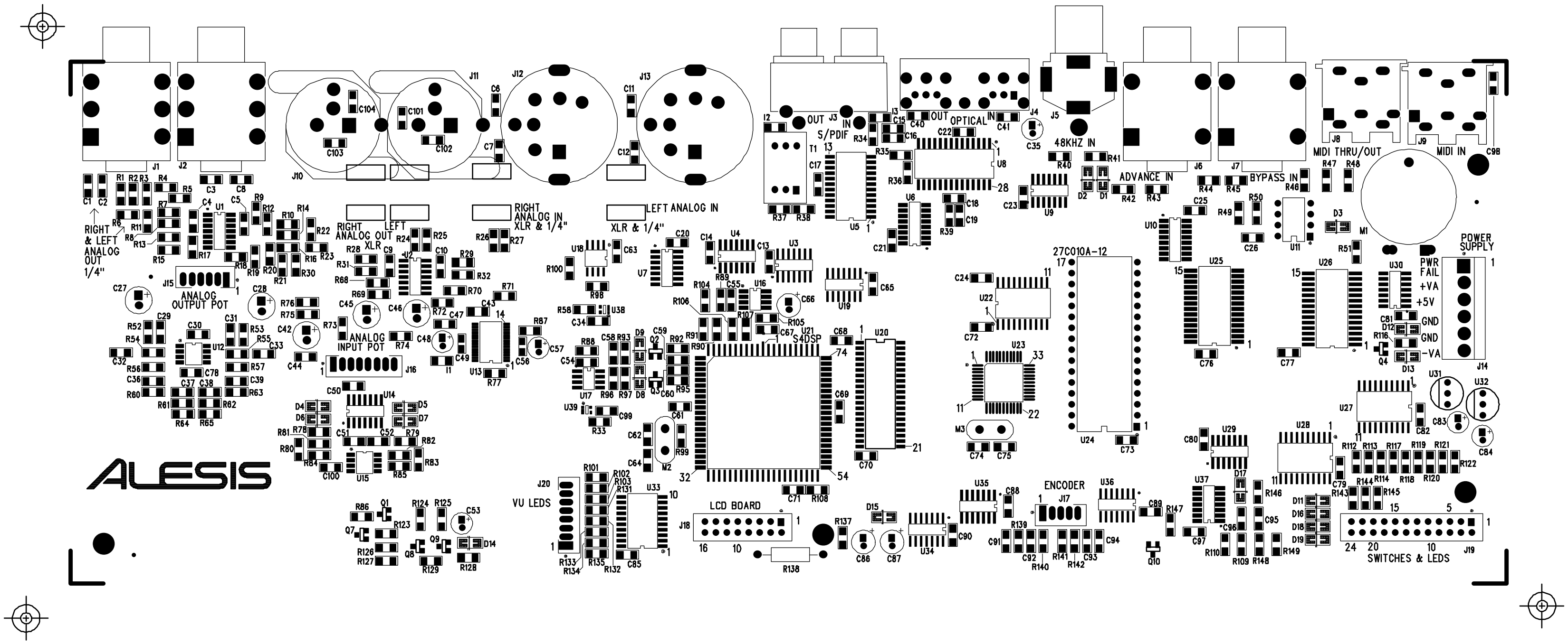
FILENAME. SIZE. C

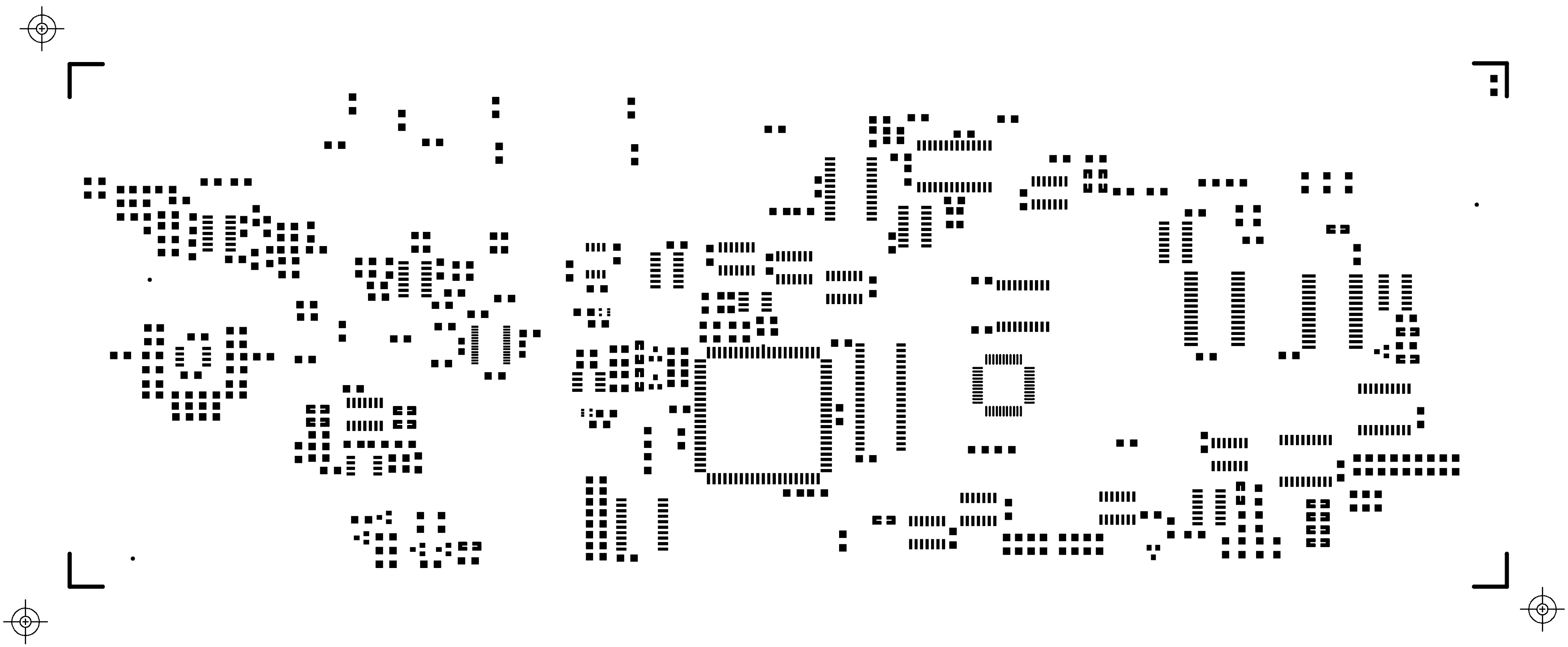
SCALE: SHEET: 3 OF 3

DRAWN: MARK HARADA DATED: 03-19-98

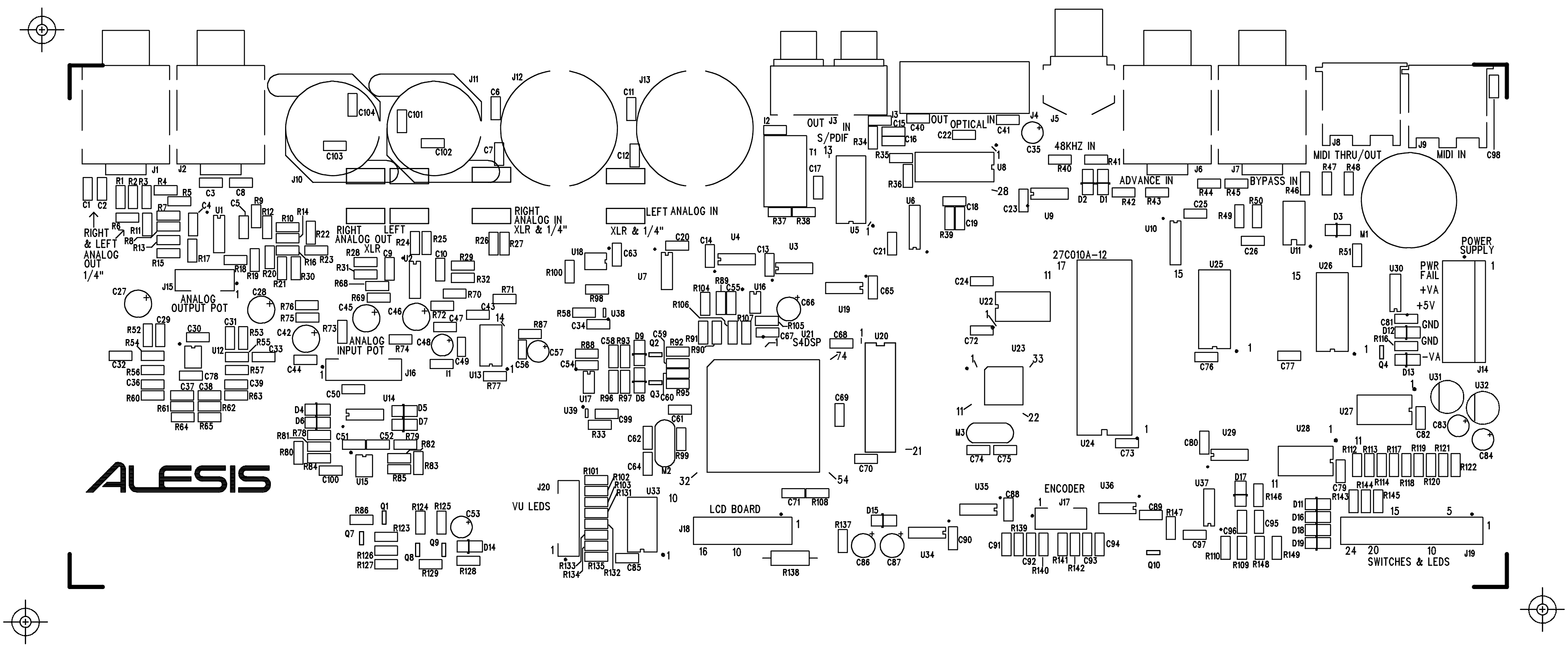
RELEASED. DATED:

9-40-1362-C "TOP ASSEMBLY DRAWING"

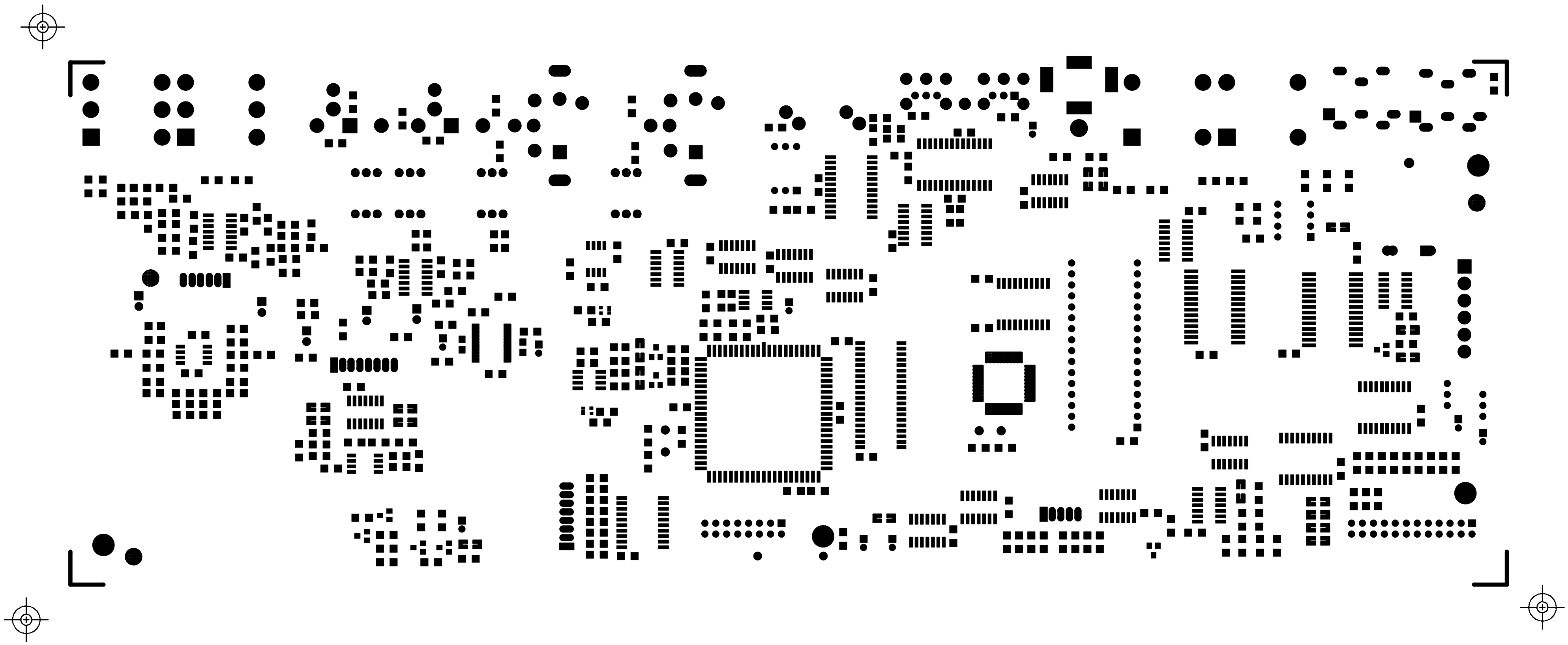




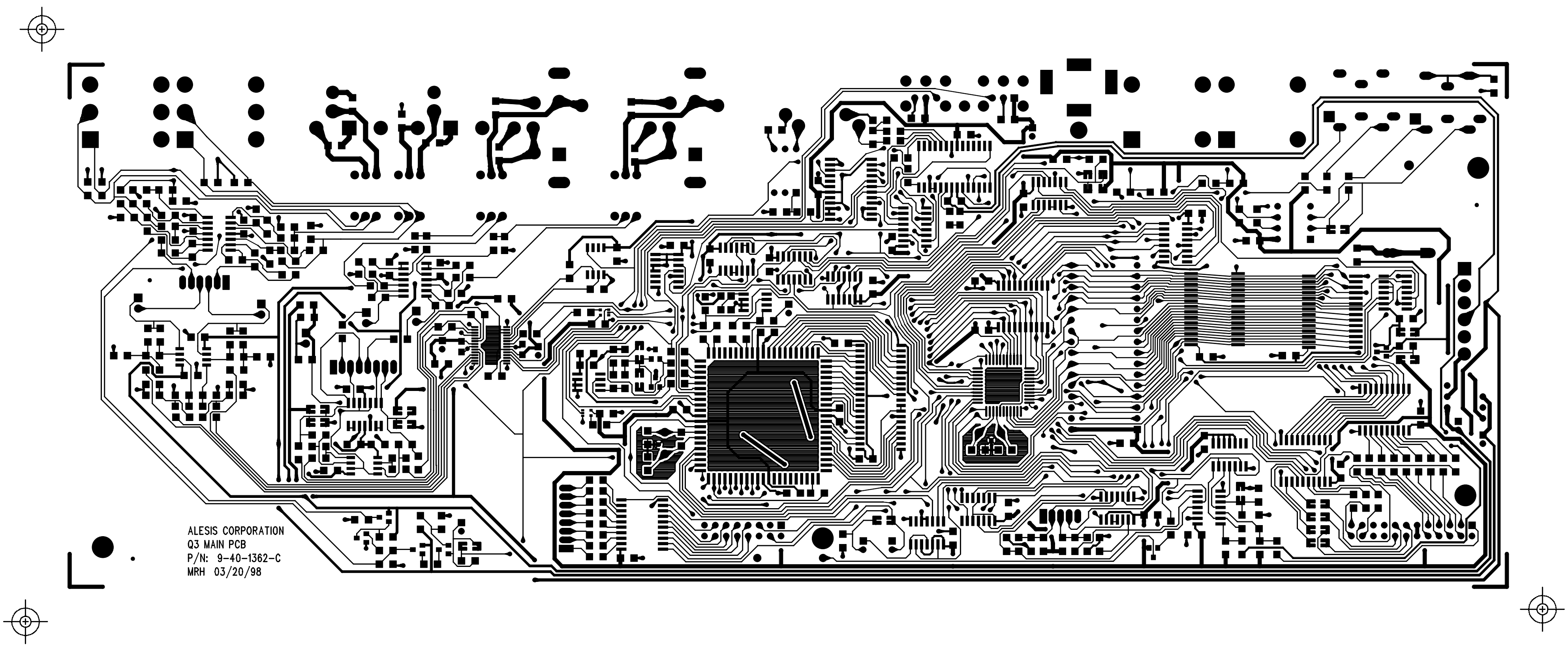
ALESIS CORPORATION A/W 9-40-1362-C "TOPPASTE"



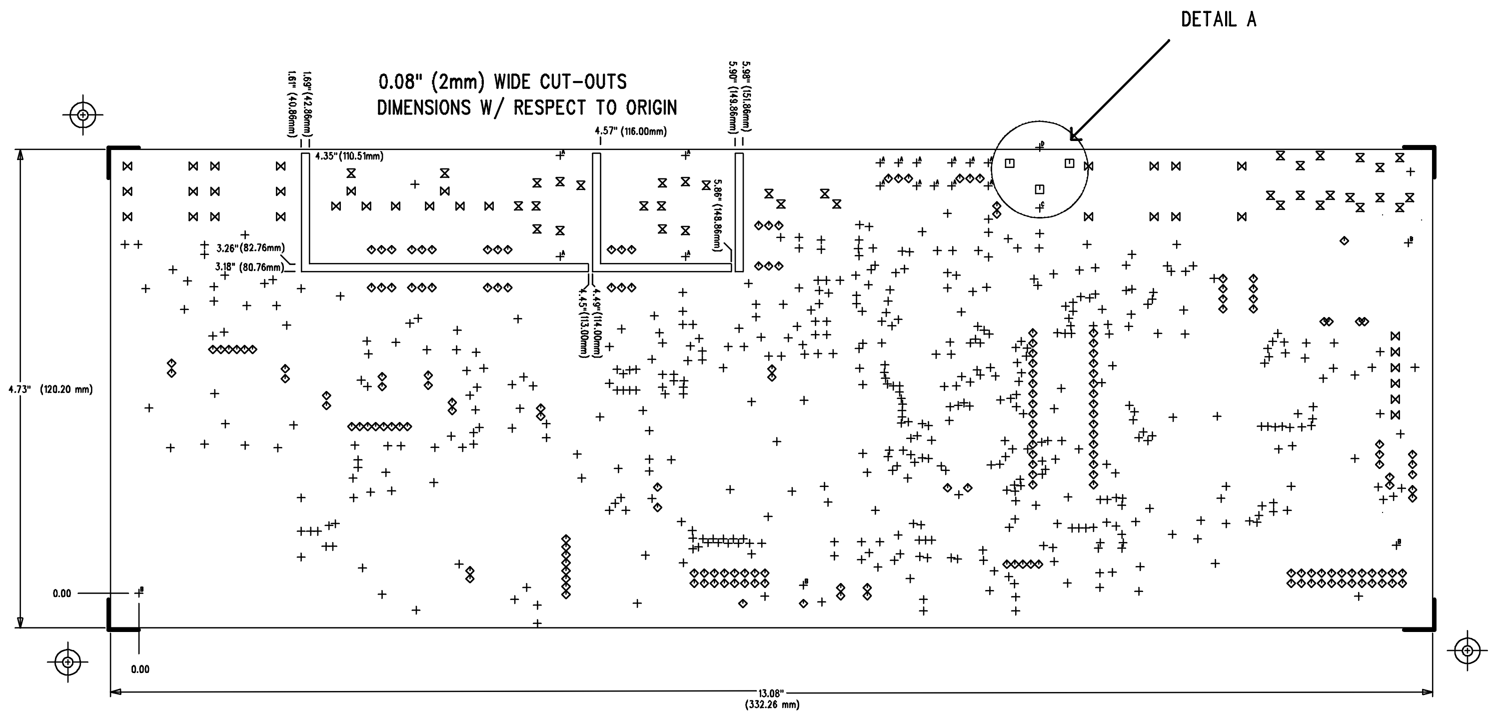
ALESIS CORPORATION A/W 9-40-1362-C "TOPSILK"

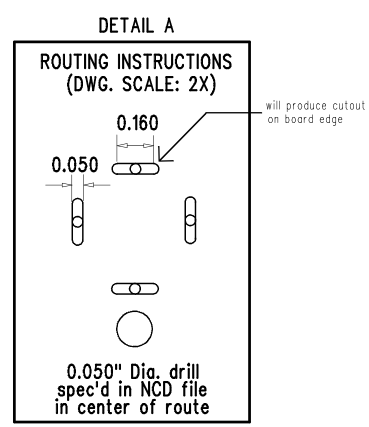


ALESIS CORPORATION   A/W 9-40-1362-C "TOPSMK"



ALESIS CORPORATION A/W 9-40-1362-C "TOPTRACE"



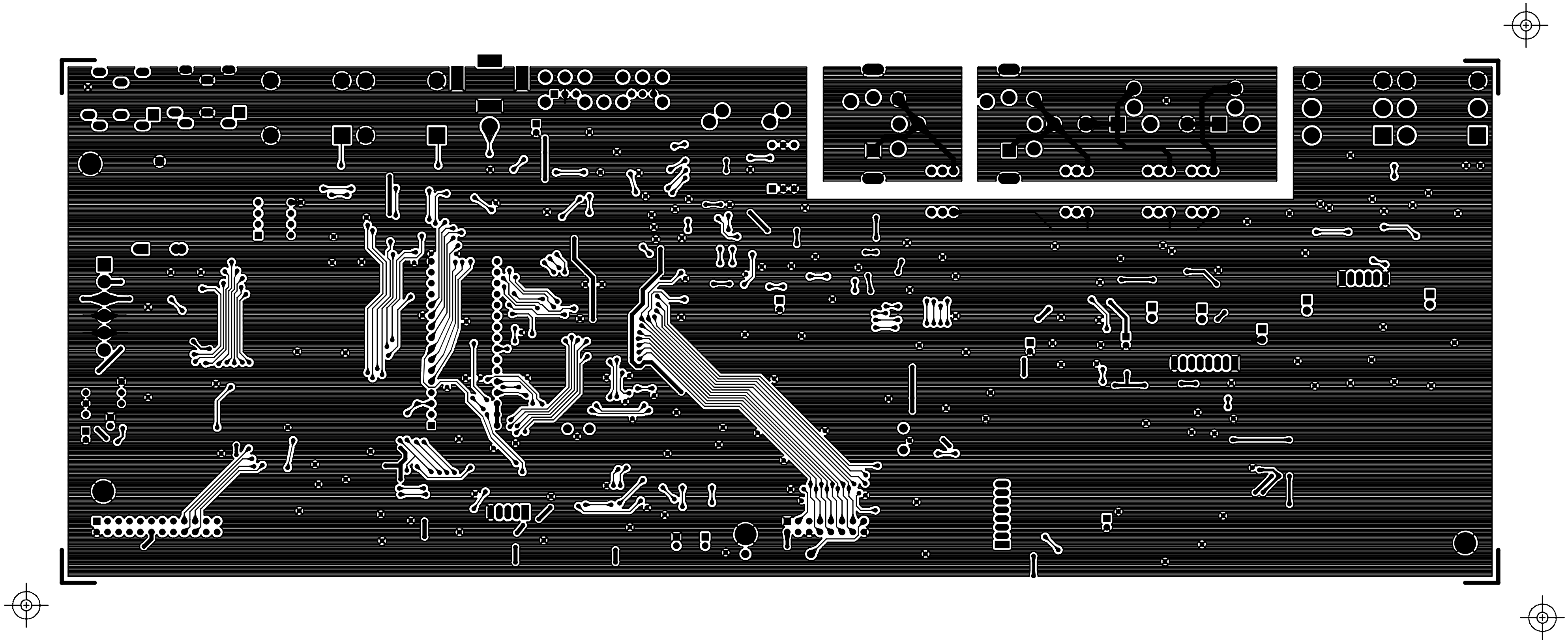


ALESIS CORPORATION
A/W 9-40-1362-C "DRILL DWG"

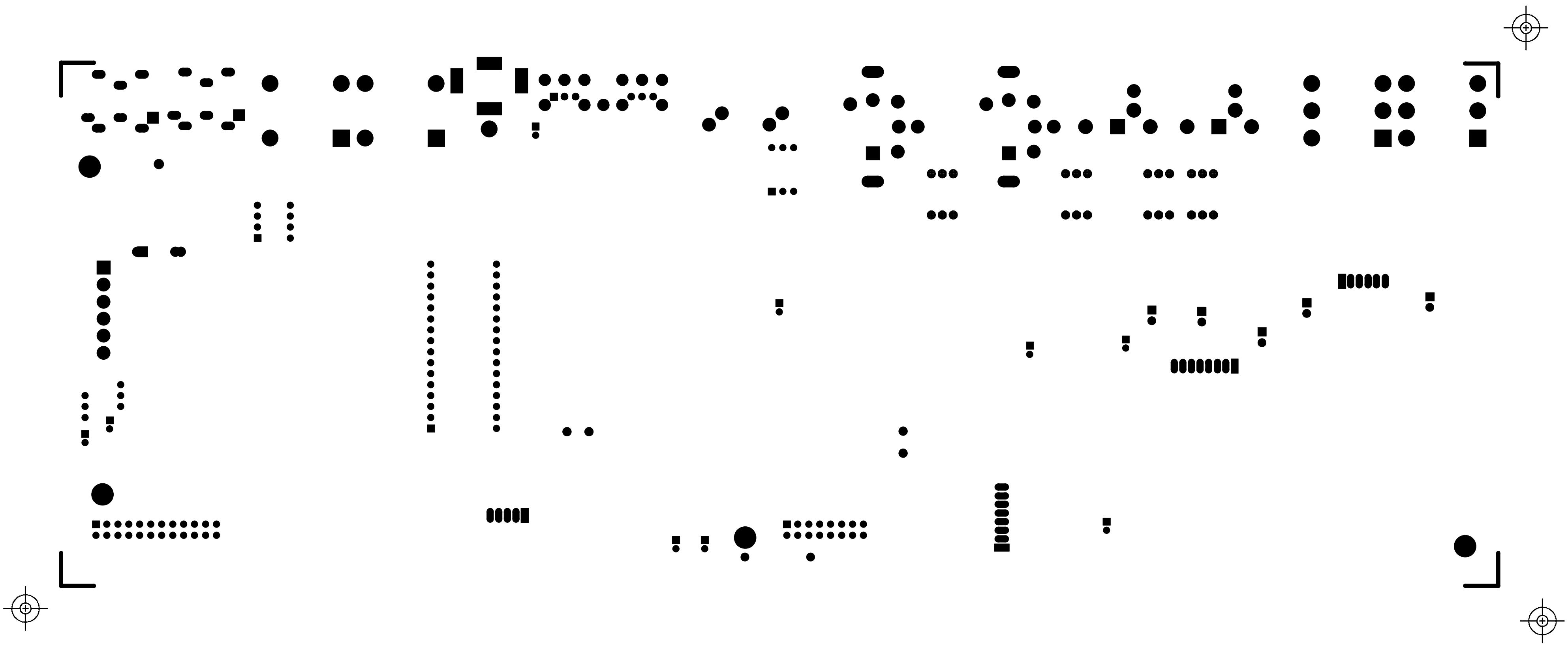
NOTES

1. Design rules used: 0.008" lines, 0.008" spaces.
2. Double layer design.
3. Surface-mount parts on one side only.
4. Material: 0.062" thick glass epoxy FR-4 (green) 1 oz. copper all layers, finished.
5. Finish: tin-lead plating .00030" minimum thickness.
6. Hole sizes are finished diameter after plating with 0.0010" minimum plating all surfaces. An "x" in drill chart PLTD column implies plated hole.
7. Layer-to-layer registration to be +/-0.005"
8. Soldermask all exposed copper, (LPI for SMT designs, SR1000 for thru-hole designs), green color.
9. Silkscreen using epoxy-based ink (white).
10. Surface to be flat within 0.010" in/in of diagonal measurement.
11. Vendor shall etch or stamp I.D. logo on solder side of pcb.
12. Soldercoat both sides 0.003" min after soldermask.
13. Finished pcb shall have 0.0035" min dielectric material between consecutive conductor layers when cured.
14. Dimension Tolerance is 0.1mm.

SIZE	QTY	SYM	PLTD
20	500	+	PLTD
50	3	⊡	PLTD
37	188	◇	PLTD
55	36	⧗	PLTD
67	34	⋈	PLTD
83	15	A	PLTD
160	4	B	PLTD
110	1	C	PLTD
50	1	D	NPLTD

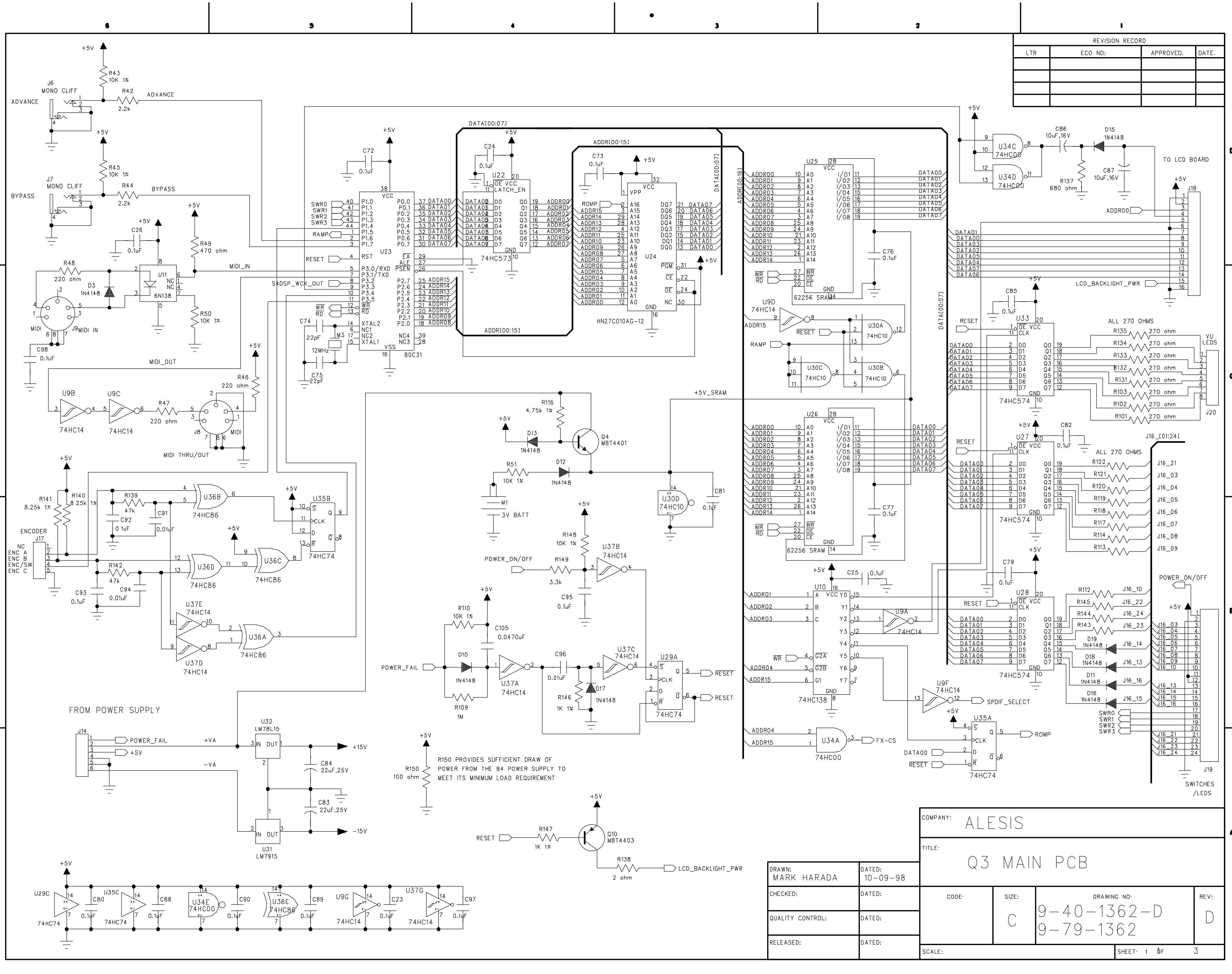


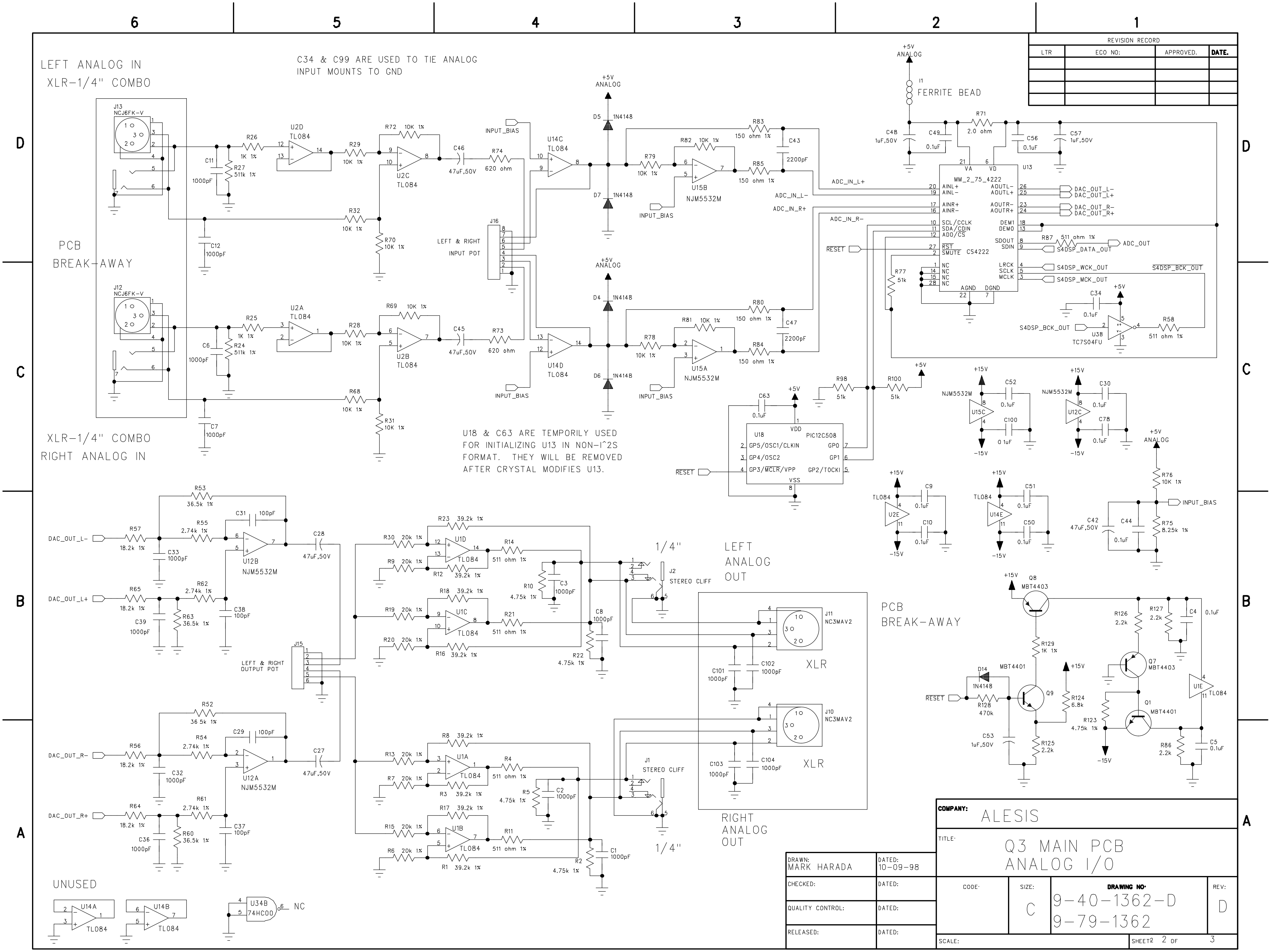
ALESIS CORPORATION A/W 9-40-1362-C "BOTTRACE"



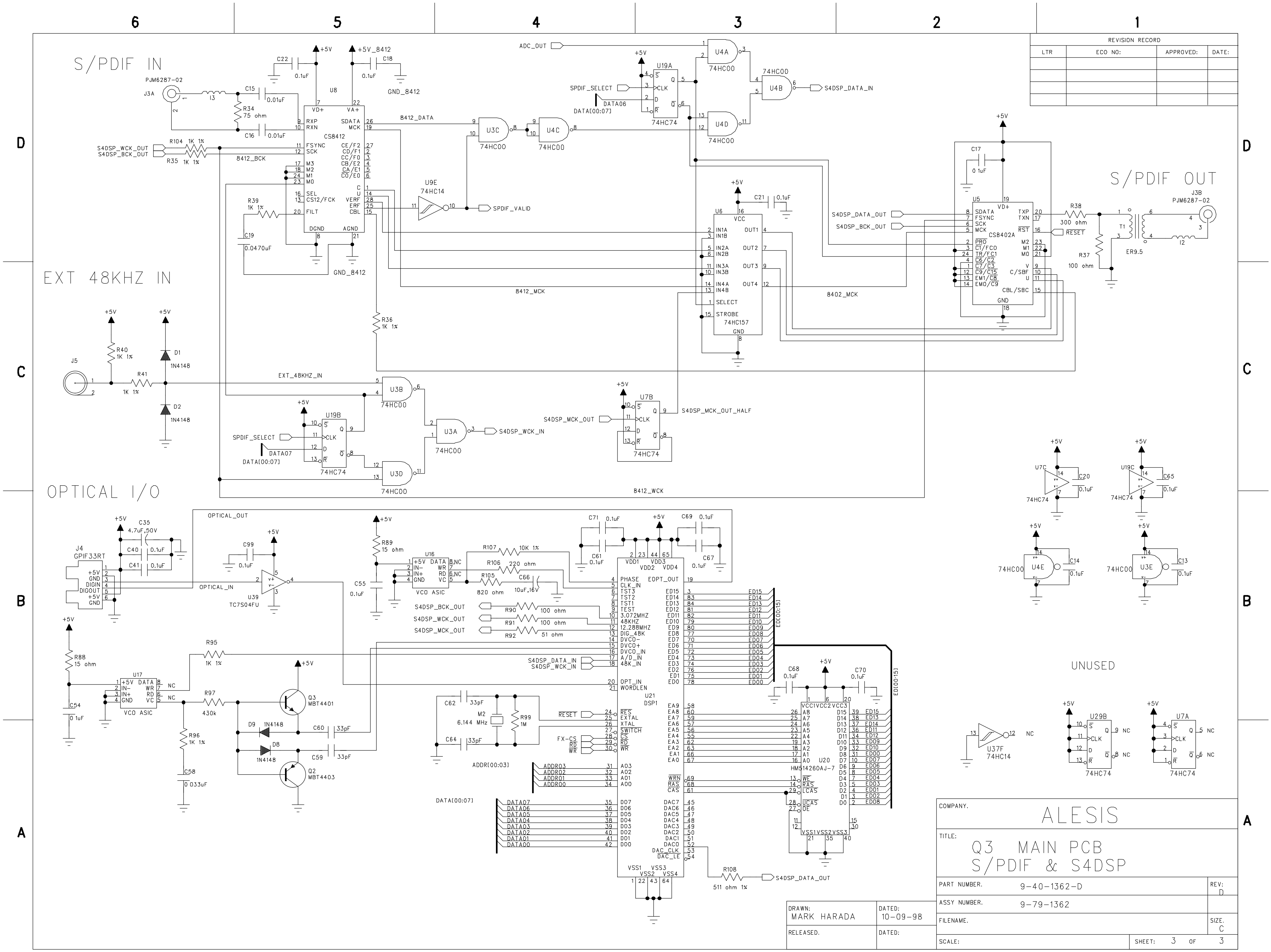
ALESIS CORPORATION A/W 9-40-1362-C "BOTSMK"

Q20 Main PCB
Rev D


REVISION RECORD
LTR
ECO NO:
APPROVED.
DATE.
TO LCD BOARD
FROM POWER SUPPLY
R150 PROVIDES SUFFICIENT DRAW OF
POWER FROM THE B4 POWER SUPPLY TO
MEET ITS MINIMUM LOAD REQUIREMENT
MIDI THRU/OUT
MIDI IN
ENCODER
VU LEDS
SWITCHES /LEDS
ALL 270 OHMS
COMPANY: ALESIS
TITLE: Q3 MAIN PCB
DRAWN: MARK HARADA
DATED: 10-09-98
CHECKED:
DATED:
QUALITY CONTROL:
DATED:
RELEASED:
DATED:
CODE:
SIZE: C
DRAWING NO: 9-40-1362-D
9-79-1362
REV: D
SCALE:
SHEET: 1 OF 3

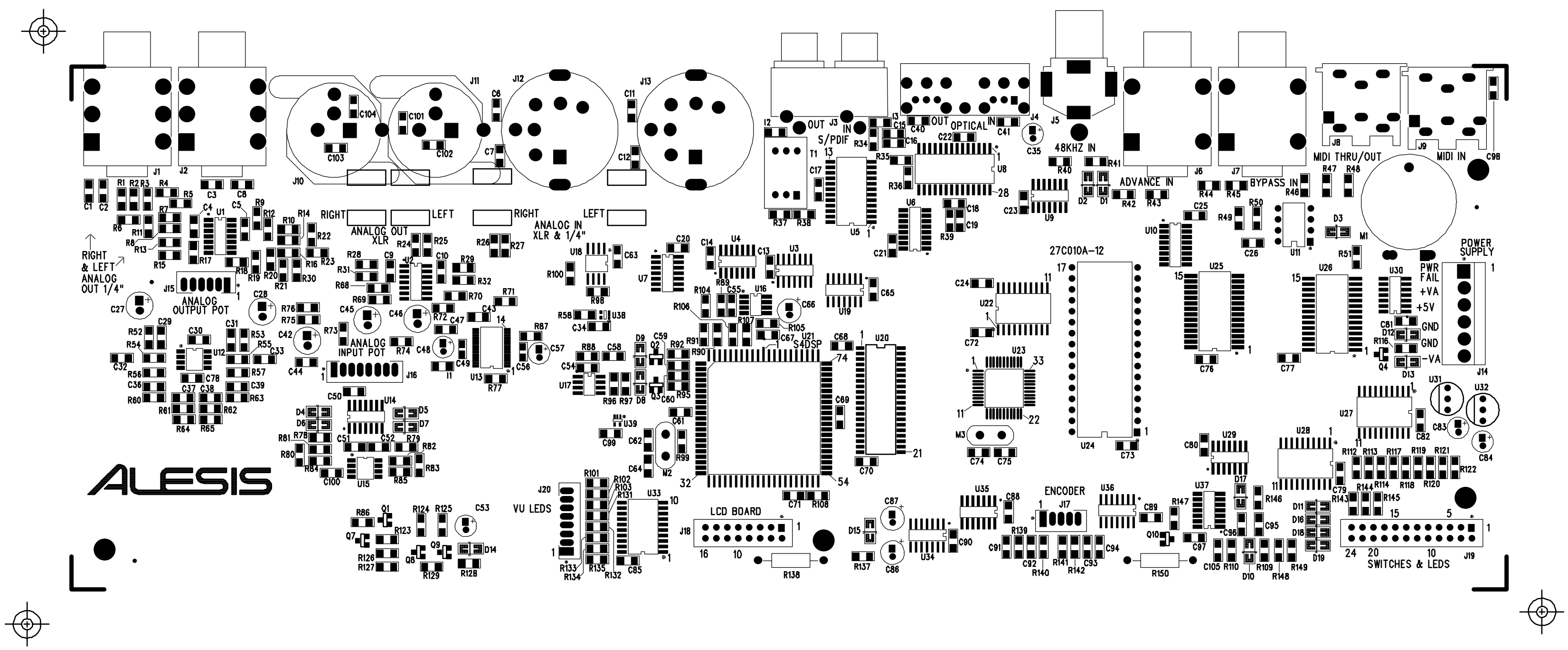


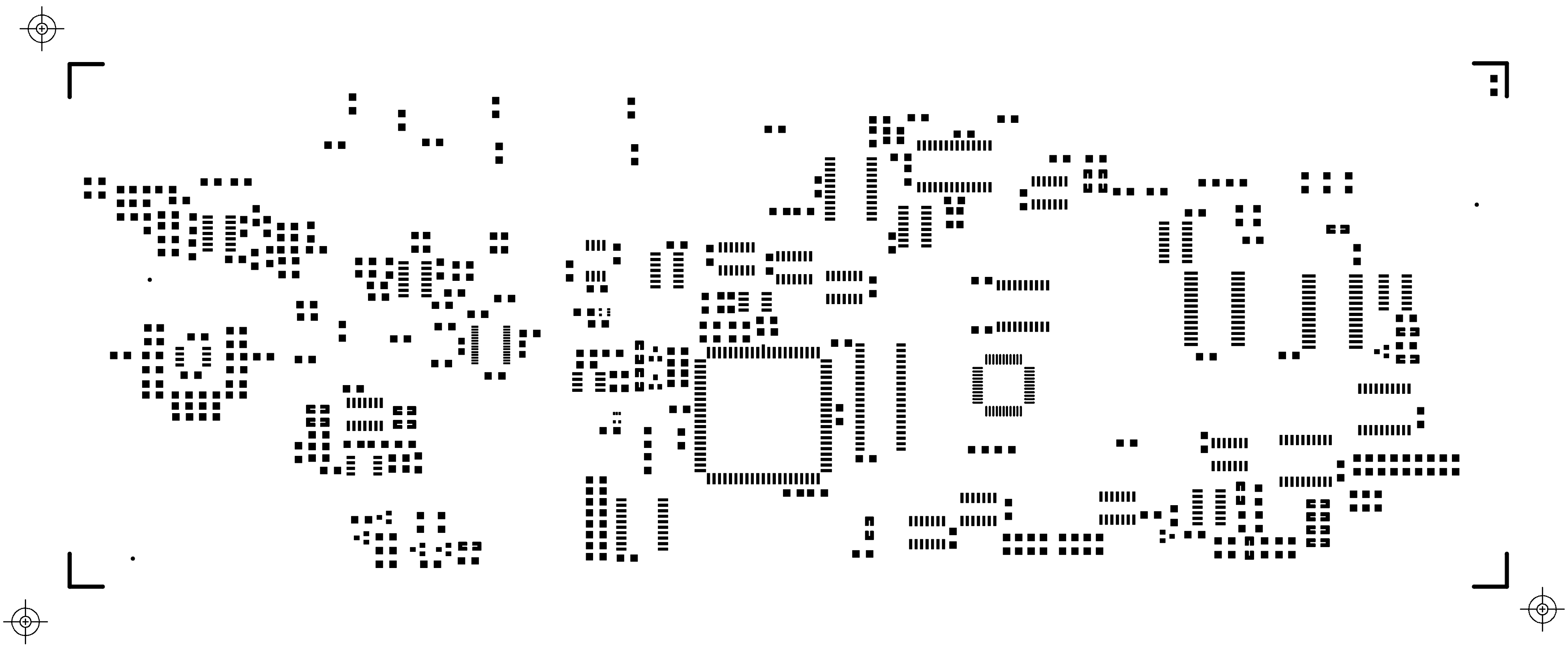
LEFT ANALOG IN
XLR-1/4" COMBO
C34 & C99 ARE USED TO TIE ANALOG
INPUT MOUNTS TO GND
PCB
BREAK-AWAY
XLR-1/4" COMBO
RIGHT ANALOG IN
U18 & C63 ARE TEMPORILY USED
FOR INITIALIZING U13 IN NON-I^2S
FORMAT. THEY WILL BE REMOVED
AFTER CRYSTAL MODIFIES U13.
LEFT & RIGHT
INPUT POT
LEFT & RIGHT
OUTPUT POT
FERRITE BEAD
MM_2_75_4222
CS4222
PIC12C508
LEFT
ANALOG
OUT
RIGHT
ANALOG
OUT
PCB
BREAK-AWAY
XLR
STEREO CLIFF
1/4"
UNUSED
NC
REVISION RECORD
LTR
ECO NO:
APPROVED.
DATE.
COMPANY: ALESIS
TITLE: Q3 MAIN PCB
ANALOG I/O
DRAWN: MARK HARADA
DATED: 10-09-98
CHECKED:
DATED:
QUALITY CONTROL:
DATED:
RELEASED:
DATED:
CODE:
SIZE: C
DRAWING NO: 9-40-1362-D
9-79-1362
REV: D
SCALE:
SHEET 2 OF 3



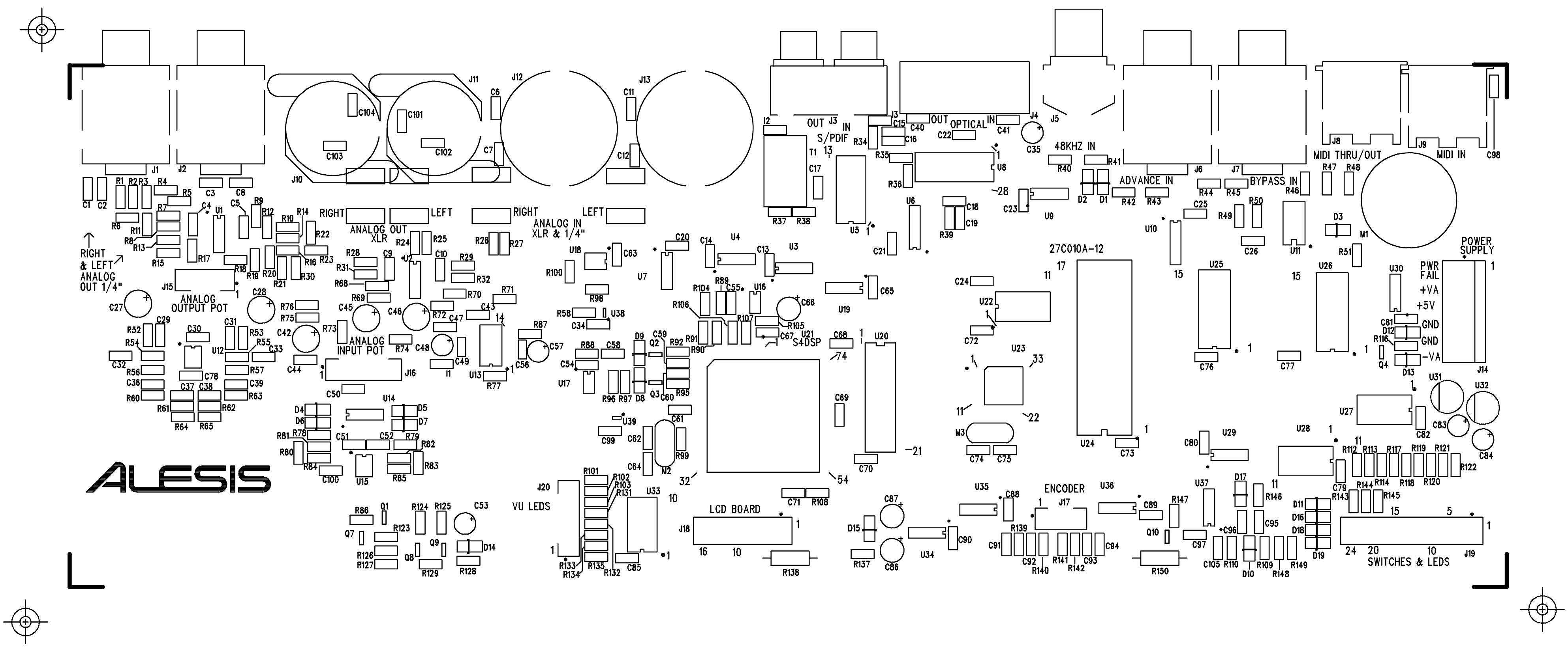
S/PDIF IN
EXT 48KHZ IN
OPTICAL I/O
S/PDIF OUT
UNUSED
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
CS8412
CS8402A
74HC00
74HC74
74HC14
74HC157
TC7S04FU
VCO ASIC
DSP1
HM514260AJ-7
MBT4401
MBT4403
1N4148
PJM6287-02
GPIF33RT
ER9.5
6.144 MHz
S4DSP_DATA_IN
S4DSP_WCK_IN
S4DSP_MCK_OUT_HALF
S4DSP_DATA_OUT
S4DSP_BCK_OUT
S4DSP_WCK_OUT
S4DSP_MCK_OUT
SPDIF_VALID
SPDIF_SELECT
ADC_OUT
8412_MCK
8412_WCK
8412_BCK
8402_MCK
EXT_48KHZ_IN
OPTICAL_OUT
OPTICAL_IN
DATA[00:07]
ADDR[00:03]
ED[00:15]
COMPANY.
ALESIS
TITLE:
Q3 MAIN PCB
S/PDIF & S4DSP
PART NUMBER.
9-40-1362-D
REV:
D
ASSY NUMBER.
9-79-1362
FILENAME.
SIZE.
C
SCALE:
SHEET: 3 OF 3
DRAWN:
MARK HARADA
DATED:
10-09-98
RELEASED.
DATED:

9-40-1362-D "TOP ASSEMBLY DRAWING"

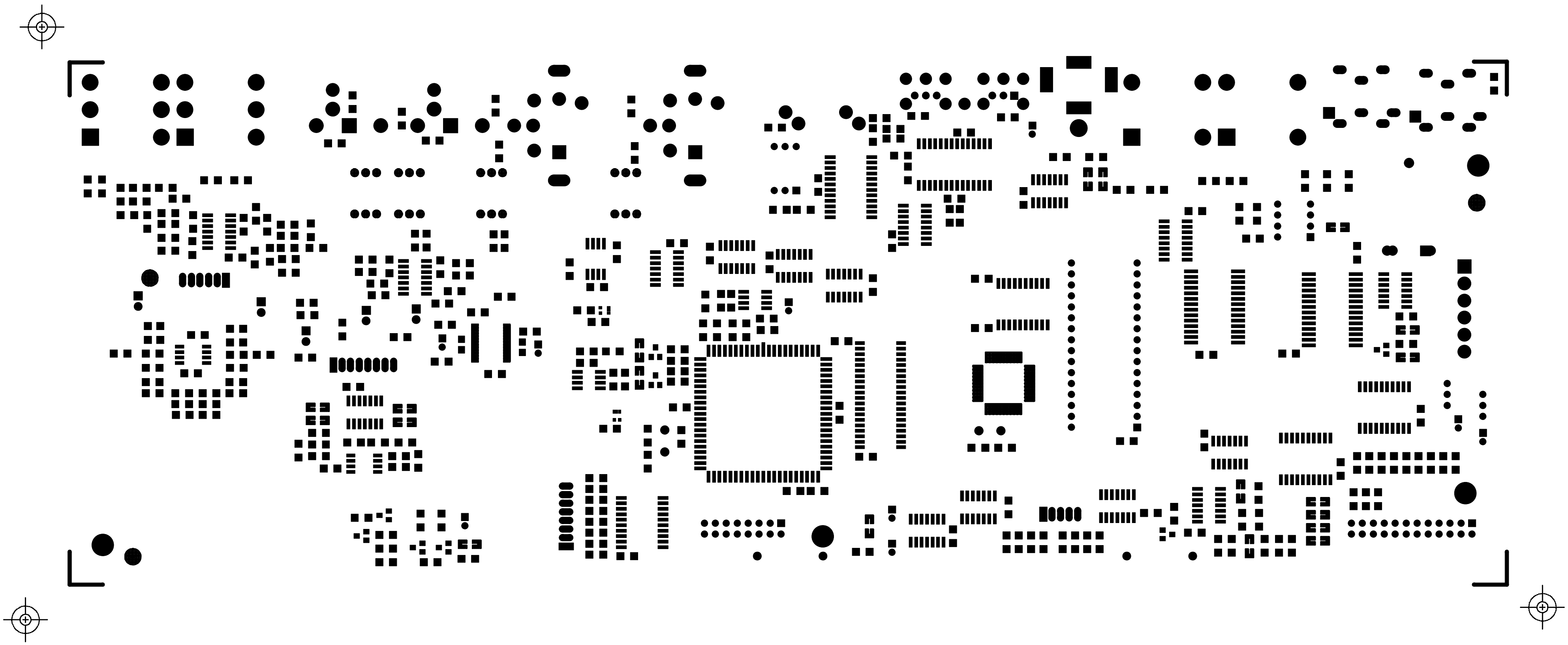




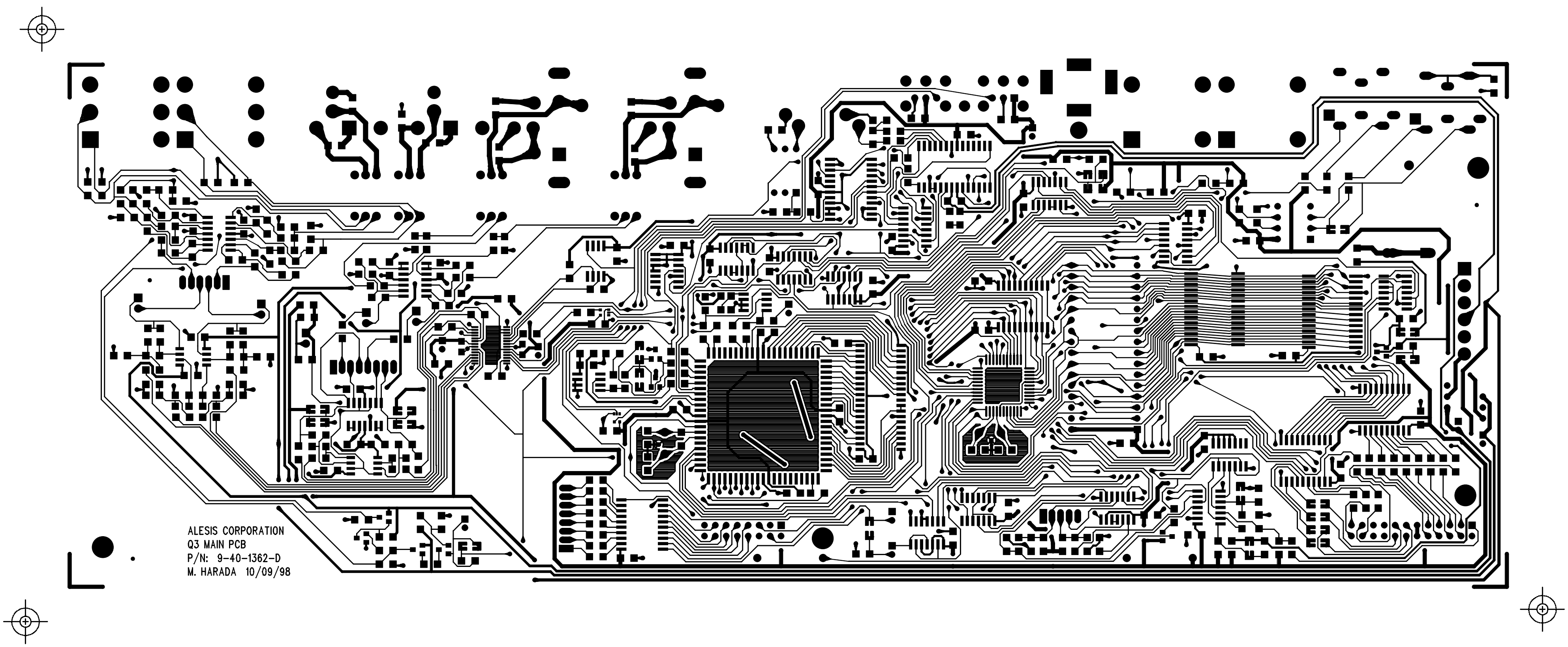
ALESIS CORPORATION A/W 9-40-1362-D "TOPPASTE"



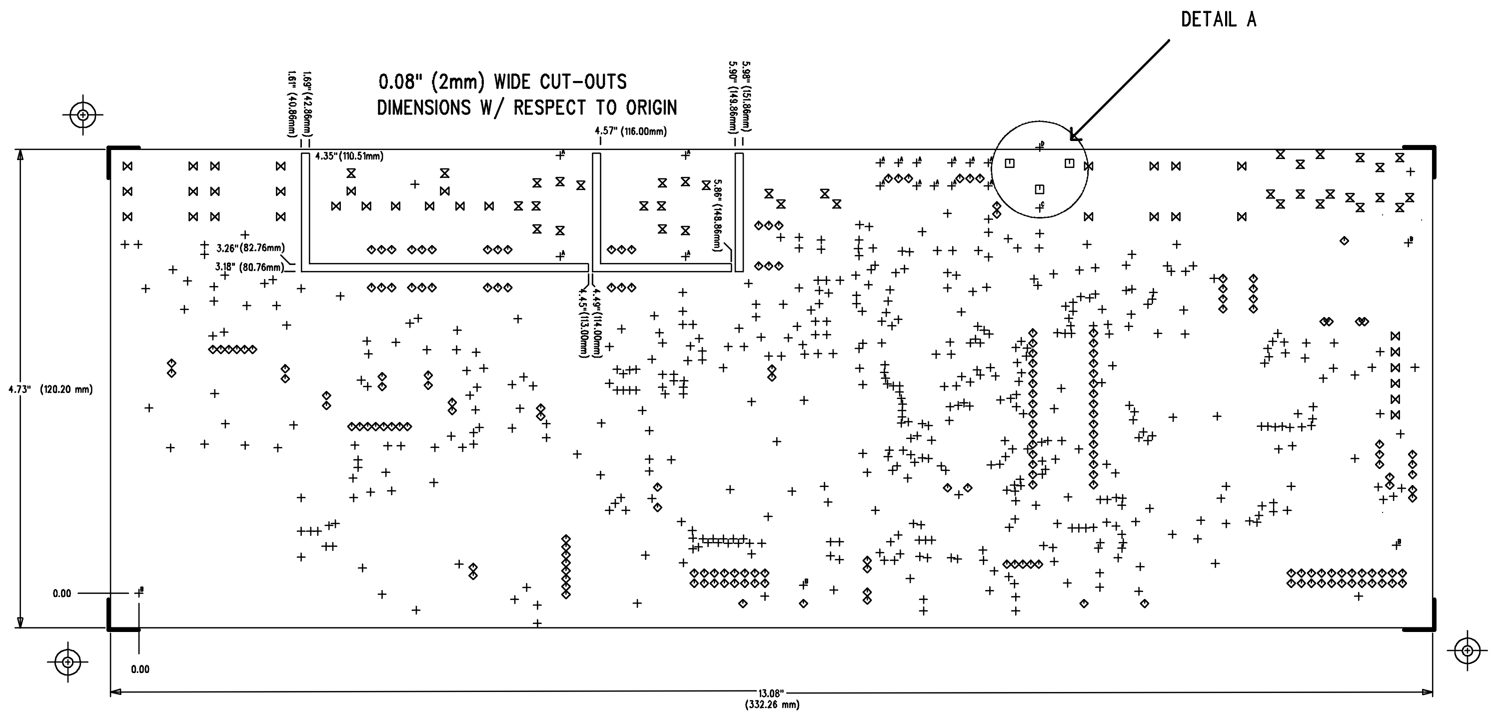
ALESIS CORPORATION A/W 9-40-1362-D "TOPSILK"



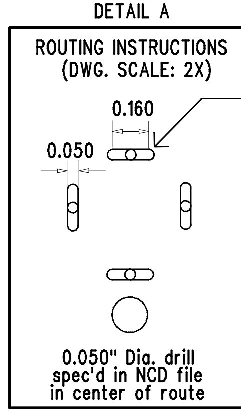
ALESIS CORPORATION A/W 9-40-1362-D "TOPSMK"



ALESIS CORPORATION A/W 9-40-1362-D "TOPTRACE"



DETAIL A



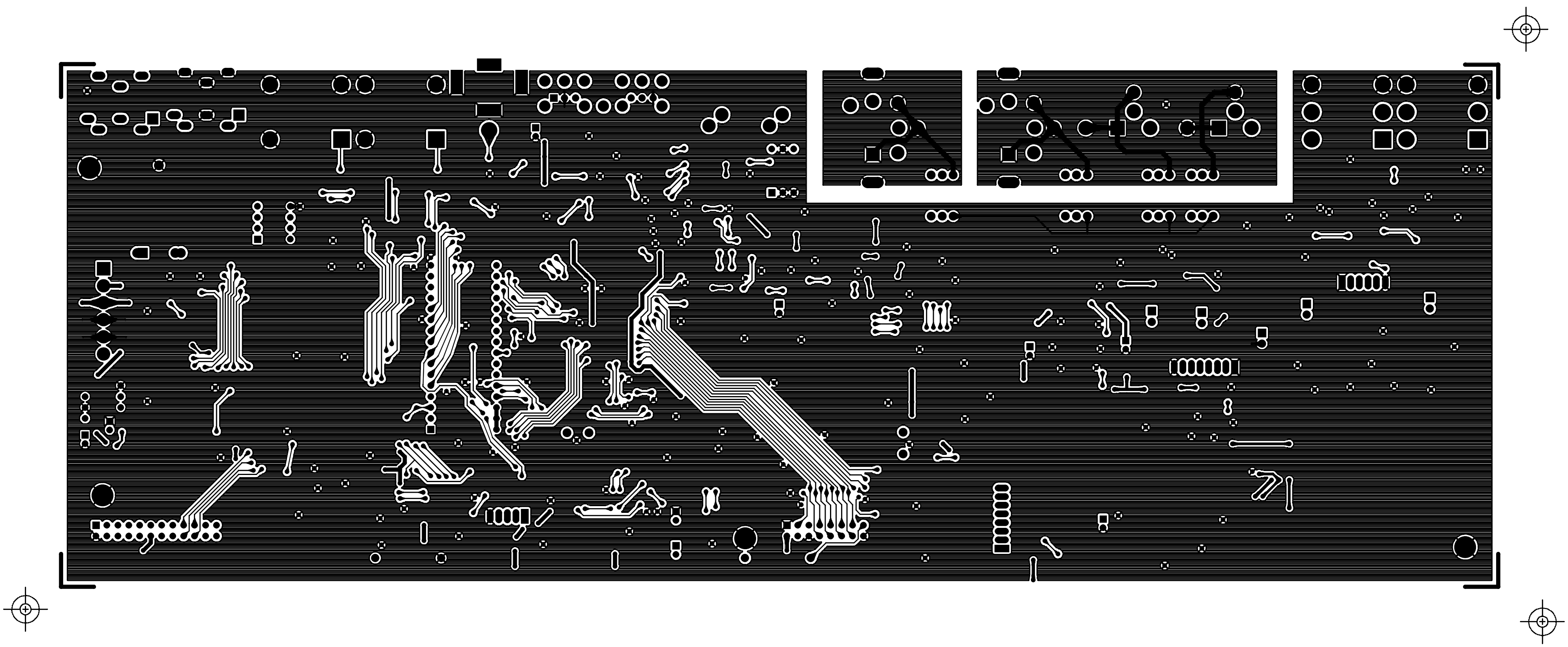
ALESIS CORPORATION

A/W 9-40-1362-D "DRILL DWG"

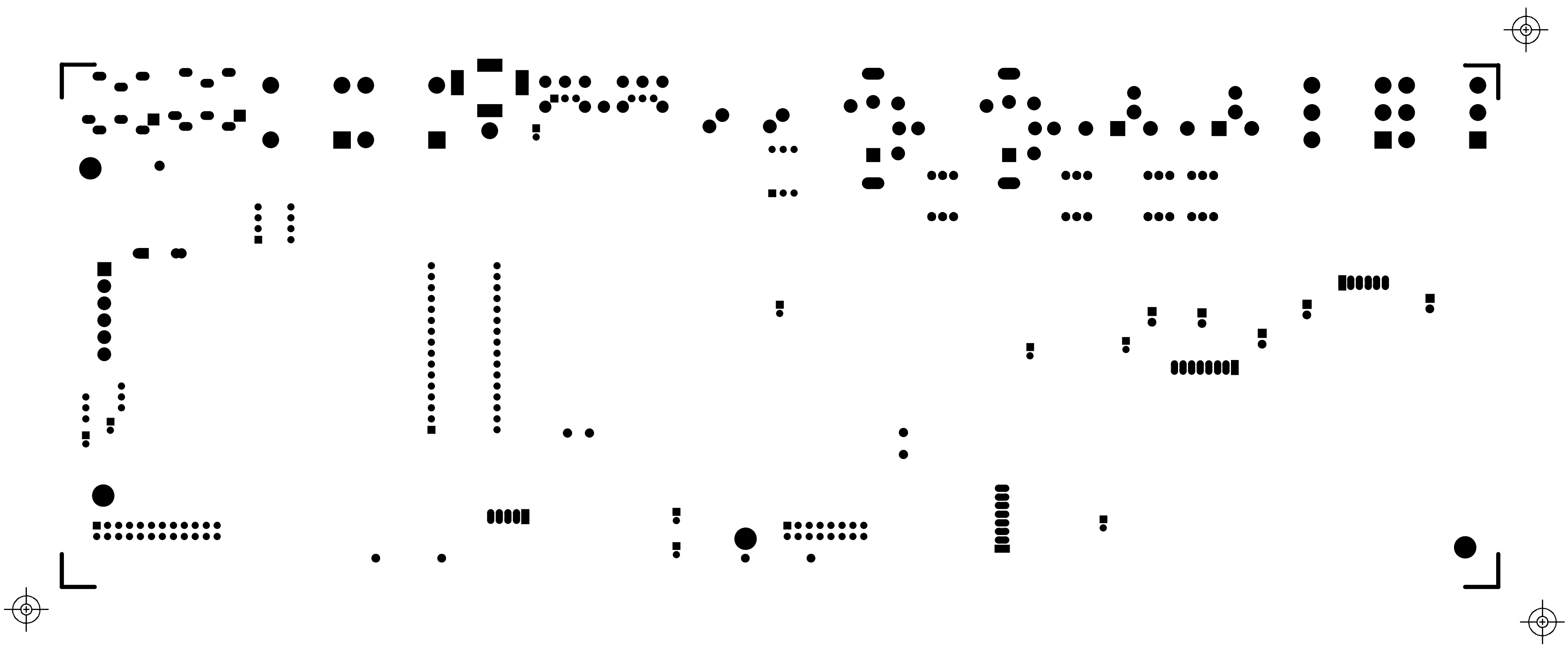
NOTES

1. Design rules used: 0.008" lines, 0.008" spaces.
2. Double layer design.
3. Surface-mount parts on one side only.
4. Material: 0.062" thick glass epoxy FR-4 (green) 1 oz. copper all layers, finished.
5. Finish: tin-lead plating .00030" minimum thickness.
6. Hole sizes are finished diameter after plating with 0.0010" minimum plating all surfaces.
   An "x" in drill chart PLTD column implies plated hole.
7. Layer-to-layer registration to be +/-0.005"
8. Soldermask all exposed copper, (LPI for SMT designs, SR1000 for thru-hole designs), green color.
9. Silkscreen using epoxy-based ink (white).
10. Surface to be flat within 0.010" in/in of diagonal measurement.
11. Vendor shall etch or stamp I.D. logo on solder side of pcb.
12. Soldercoat both sides 0.003" min after soldermask.
13. Finished pcb shall have 0.0035" min dielectric material between consecutive conductor layers when cured.
14. Dimension Tolerance is 0.1mm.

SIZE	QTY	SYM	PLTD
20	499	+	PLTD
50	3	⊡	PLTD
37	190	◇	PLTD
55	36	⧗	PLTD
67	34	⋈	PLTD
83	15	A	PLTD
160	4	B	PLTD
110	1	C	PLTD
50	1	D	NPLTD



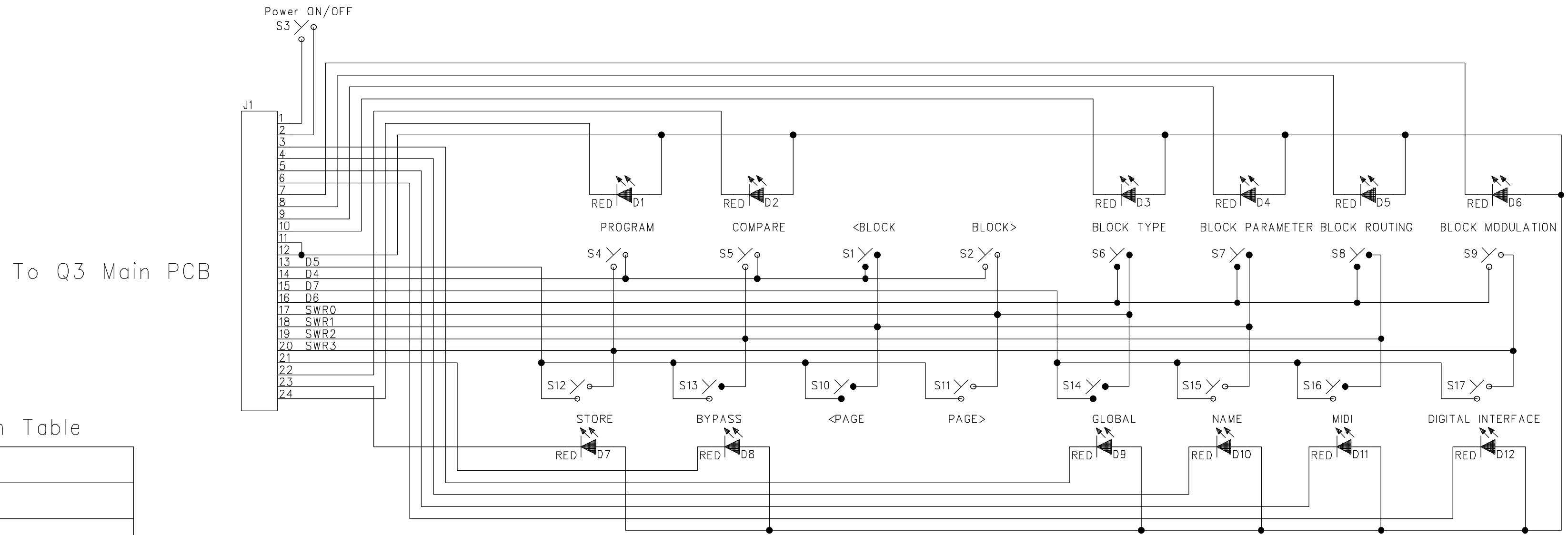
ALESIS CORPORATION A/W 9-40-1362-D "BOTTRACE"



ALESIS CORPORATION A/W 9-40-1362-D "BOTSMK"

Q20 Front Panel PCB Rev A

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



LED Connection Table

Y0Q0	Bypass
Y0Q1	Global
Y0Q2	Name
Y0Q3	Midi
Y0Q4	Digital Interface
Y0Q5	Block Modulation
Y0Q6	Block Rounting
Y0Q7	Block Parameter
Y1Q0	Block Type
Y1Q1	Compare
Y1Q2	Program
Y1Q3	Store

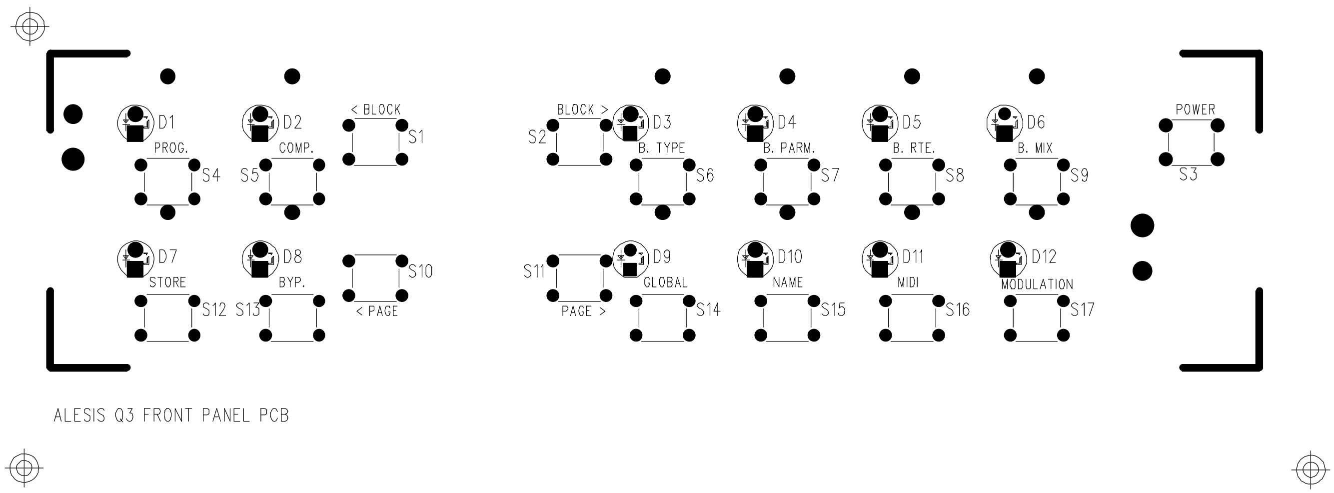
NOTE: Yx = output of '138 on MAIN PCB
Qx = output of '574 on MAIN PCB

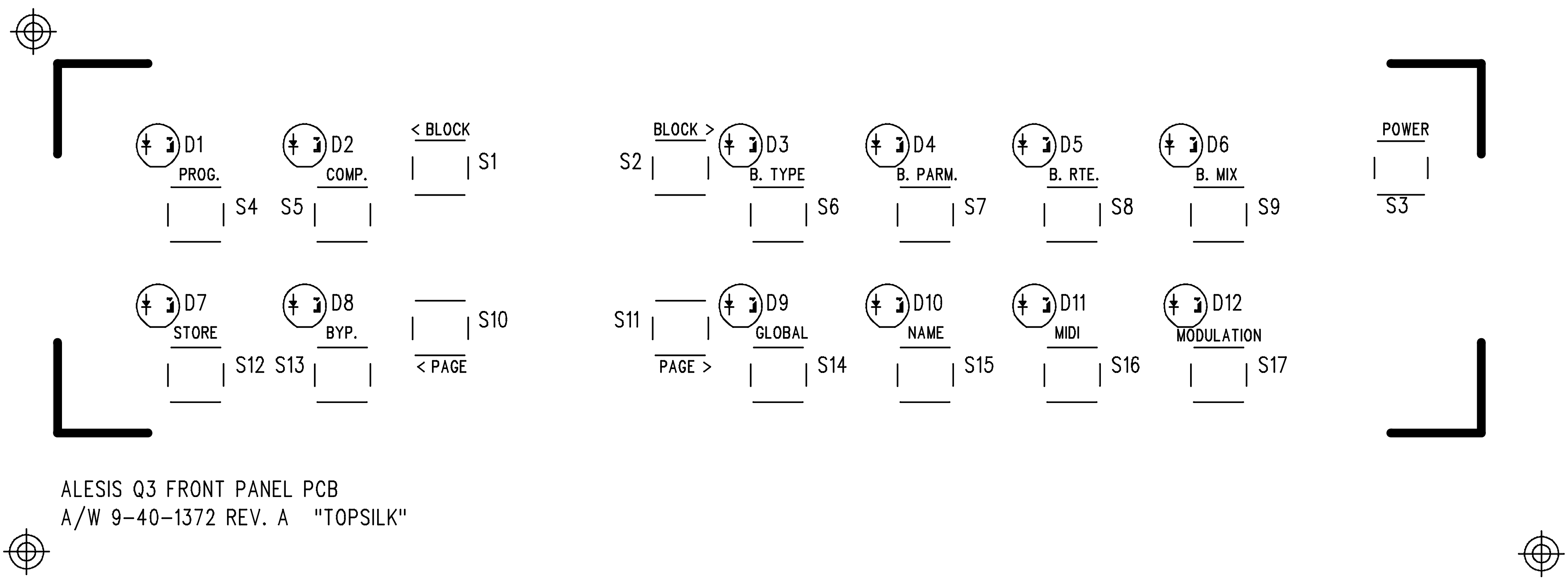
Switch Matrix Chart

	SWR0	SWR1	SWR2	SWR3
D4	BLOCK>	<BLOCK	COMPARE	PROGRAM
D5	PAGE>	<PAGE	BYPASS	STORE
D6	BLOCK TYPE	BLOCK PARAMETER	BLOCK ROUTING	BLOCK MODULATION
D7	GLOBAL	NAME	MIDI	DIG. INTERFACE

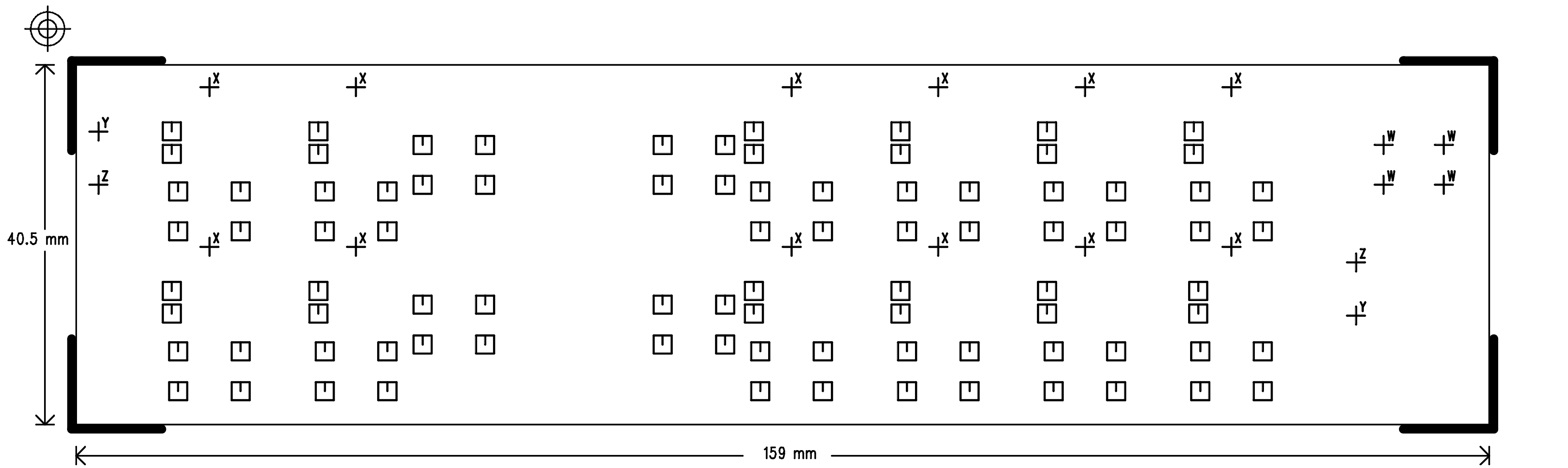
DRAWN: Jay Kho	DATED: 01/98	COMPANY: ALESIS	
RELEASED:	DATED:	TITLE: Q3 Front Panel PCB	
		PART NUMBER: 9-40-1372-A	REV: A
		ASSY NUMBER: 9-79-1372	
		FILENAME: Q3FPA***.SCH	SIZE: B
		SCALE:	SHEET: 1 OF 1

9-40-1372-A "TOP ASSEMBLY DRAWING"





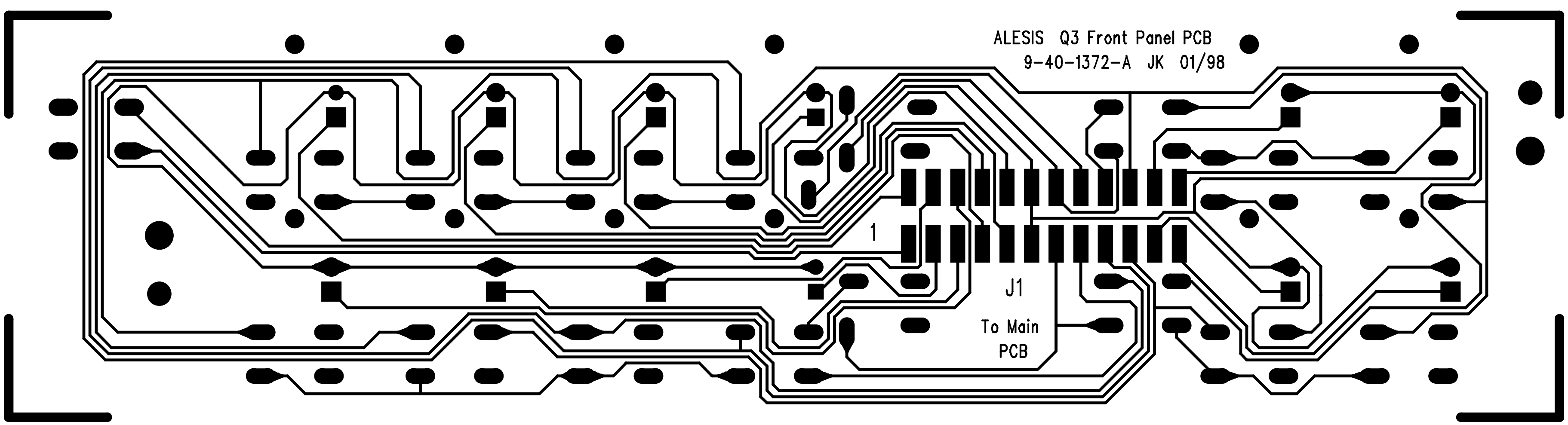
ALESIS Q3 FRONT PANEL PCB
A/W 9-40-1372 REV. A "TOPSILK"



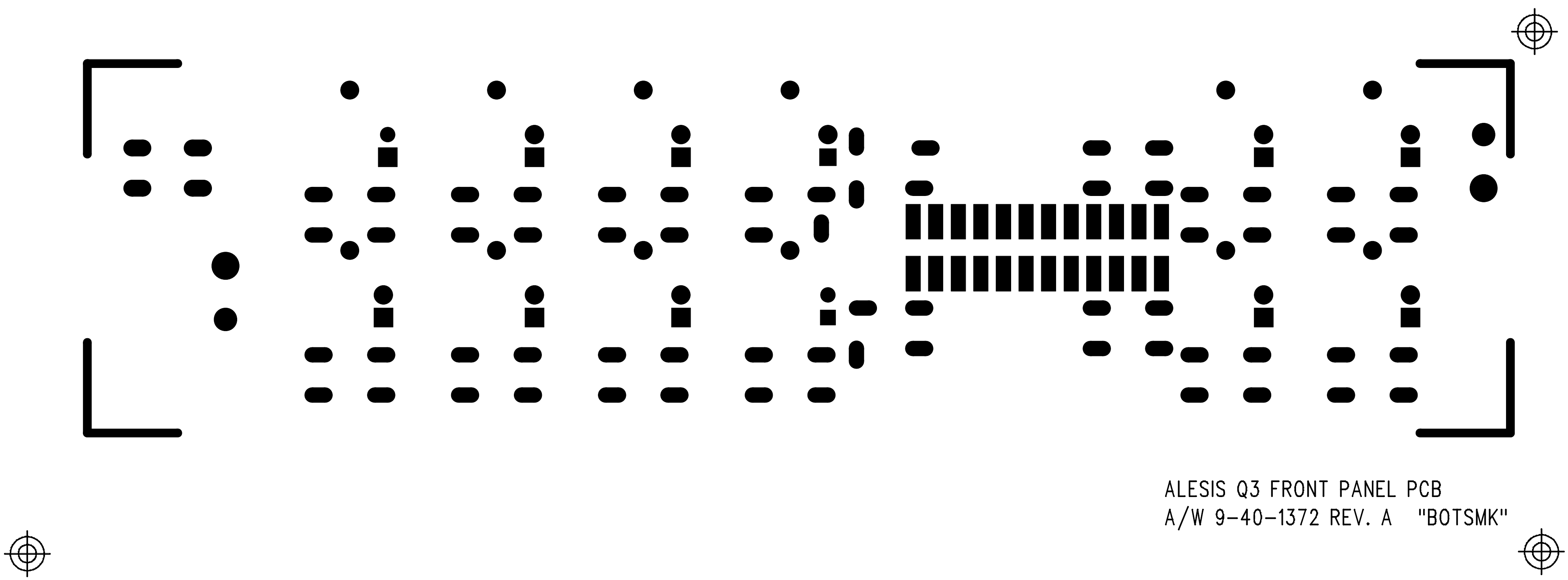
ALESIS Q3 FRONT PANEL PCB
A/W 9-40-1372 REV. A "DRILLDWG"

SIZE	QTY	SYM	NON-PLTD
37	88	⊡	x
40	4	W	x
78.74	12	X	x
98.43	2	Y	x
118.11	2	Z	x

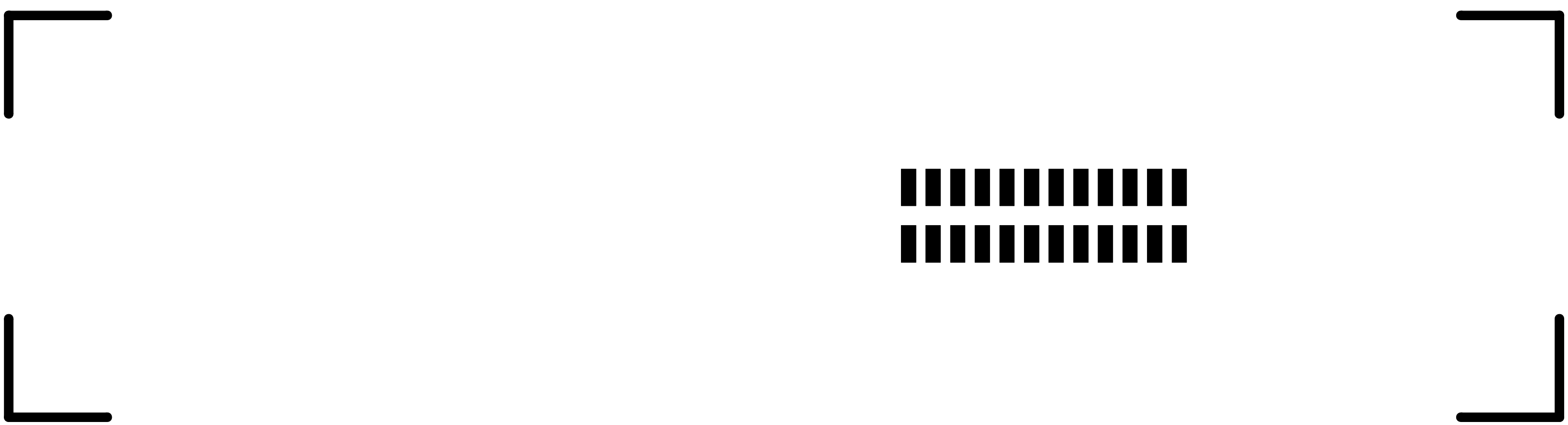
1. Design rules used: 0.013" lines, 0.012" spaces.
2. Single layer design.
3. Material: 0.062" (+/- 0.007") thick glass epoxy FR-4 (green), 1 oz. copper all layers, finished.
4. Finish: tin-lead plating .00030" minimum thickness. with 0.0010" minimum plating all surfaces.
5. Hole sizes are finished diameter after copper plating
6. Layer-to-layer registration to be +/- 0.005".
7. Soldermask, green color, SR1000.
8. Silkscreen using epoxy-based ink (white).
9. Surface to be flat within 0.010" in/in of diagonal measurement.
10. Vendor shall etch or stamp I.D. logo on solder side of pcb.
11. Soldercoat all exposed copper 0.003" min after soldermask. Solderability to standard J-STD-003.
12. Finished pcb shall have 0.0035" min dielectric material between consecutive conductor layers when cured.
13. Drilled holes are +/- 0.003" tolerance.
14. Mechanical dims are +/- 0.005" tolerance.
15. All holes are NON-PLATED.



ALESIS Q3 FRONT PANEL PCB
A/W 9-40-1372 REV. A "BOTTRACE"



ALESIS Q3 FRONT PANEL PCB
A/W 9-40-1372 REV. A "BOTSMK"



ALESIS Q3 FRONT PANEL PCB
A/W 9-40-1372 REV. A "BOTPASTE"

ALESIS
Q20 (Q3)

ECN
HISTORY

ALESIS STUDIO ELECTRONICS

DOCUMENT CONTROL RELEASE APR 22 1998 APPROVAL ALESIS

ENGINEERING CHANGE NOTICE

ECN #: 811201 **DATE:** April 20, 1998

PRODUCT: Q3 **ASSY:** 9-79-1362 main PCB Assy

CHANGE TO BE MADE

WAS P/N 9-40-1362 REV C	IS P/N 9-40-1362 REV C
R33 was 0-11-5110 (511Ω 1%)	R33 is 0-10-0000 (0Ω 1206)

REASON FOR CHANGE: Reduces clock jitter for clock generated from the optical input.

SPECIAL INSTRUCTIONS: **Number of pages:** ___

PROJECT ENGINEER: Mark Harada DJS WM

MANUF. COORDINATOR:

STUDIO ELECTRONICS

ENGINEERING CHANGE NOTICE

DOCUMENT CONTROL RELEASE
MAY 06 1998
APPROVAL
ALESIS

ECN #: 812603

DATE: May 4, 1998

PRODUCT: Q3

ASSY: 9-79-1362

CHANGE TO BE MADE

WAS P/N 9-40-1362 REV C

For optical input:

R96 was 0-10-0101 (100Ω)
R97 was 0-11-1002 (10KΩ)
R93 was 0-10-0105 (1MΩ)

For power-up circuit:

R109 was 0-10-0221 (220Ω)

R110 was 0-10-0332 (3.3KΩ)

IS P/N 9-40-1362 REV C

R96 is 0-11-1001 (1KΩ 1%)
R97 is 0-10-0434 (430KΩ)
R93 is removed, open circuit

R109 is replaced by 2-50-4148 (1N4148) and 0-10-0105 (1MΩ)
R110 is replaced by 1-50-0473 (0.047μF)
R109 and R110 is then connected w/ 0-11-1001 (1KΩ)
Refer to attached diagrams.

REASON FOR CHANGE: Removes clicks and pops from the optical input signal. Prevents the system from initially locking up when plugging in power.

SPECIAL INSTRUCTIONS: **Number of pages:** 3

For R109: install 2-50-4148 and 0-10-0105 together on the pads. The anode of 2-50-4148 should be toward the front panel and the cathode toward the back panel.
For R110: Replace with 1-50-0473. Connect 1-50-0473 to 0-10-0105 and the anode of 2-50-4148 using 0-11-1001. Refer to attached diagrams.

PROJECT ENGINEER: Mark Harada [signature]

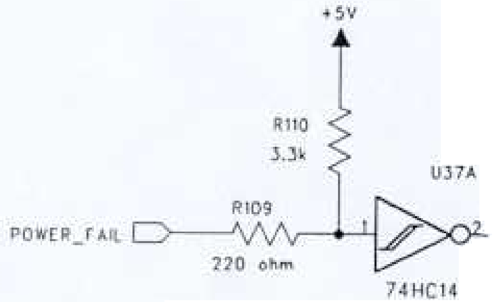
OK [signature]

WM

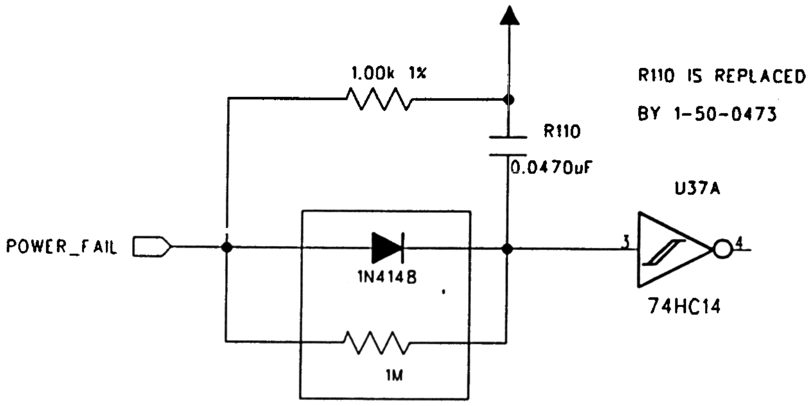
MANUF. COORDINATOR: Joe Lo

REVISION RECORD			
LTR.	ECO NO:	APPROVED:	DATE:

BEFORE ECN



AFTER ECN

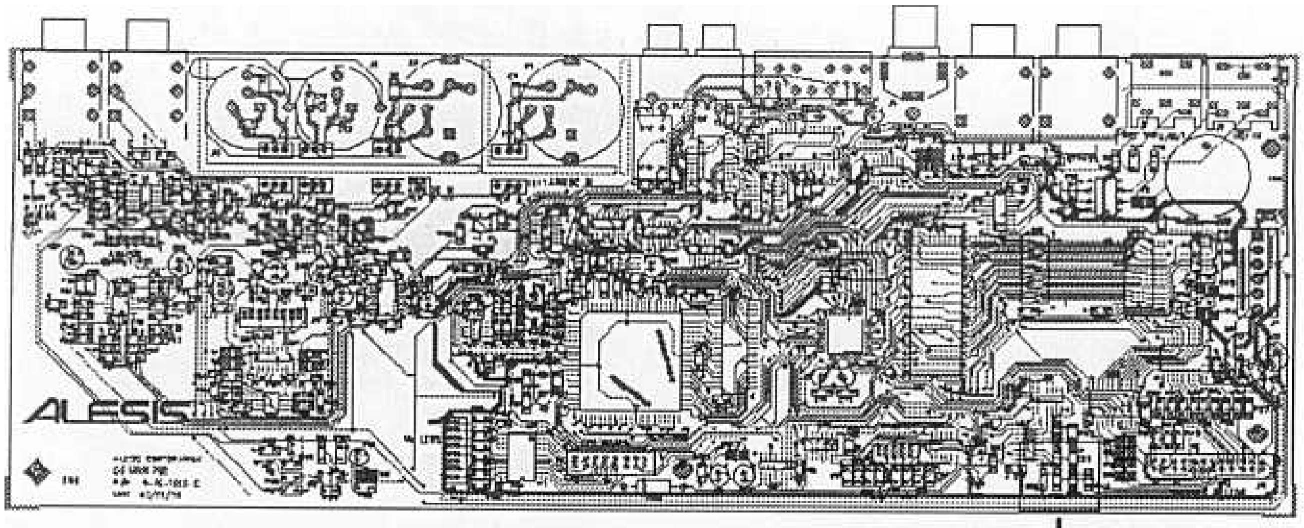


R110 IS REPLACED BY 1-50-0473

R109 IS REPLACED BY 2-50-4148 AND 0-10-0105

ECN 812603

COMPANY:	ALESIS
TITLE:	03 ECN FOR POWER-UP RESET CIRCUIT
DRAWN: MARK HARADA	DATED:
RELEASED:	DATED:
PART NUMBER:	REV:
ASSY NUMBER:	
FILENAME:	SIZE: A
SCALE:	SHEET: OF

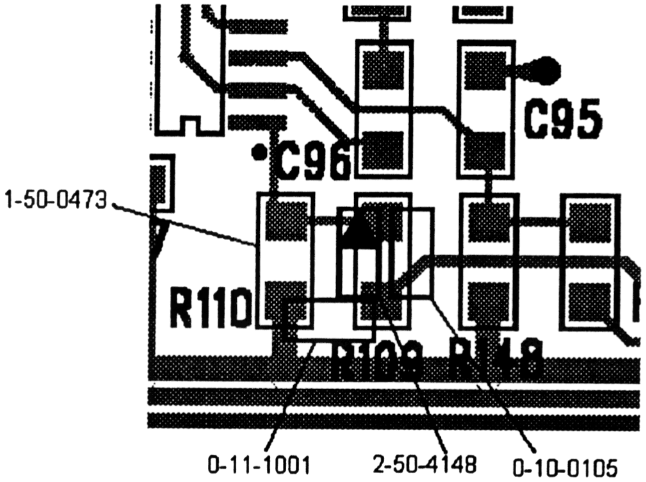


ECN FOR POWER-UP RESET CIRCUIT

REPLACE R110 W/ 1-50-0473

REPLACE R109 W/ 2-50-4148 & 0-10-0105
ARROW OF 2-50-4148 INDICATES POLARITY

USE 0-11-1001 TO CONNECT R110 TO R109 AS SHOWN



ECN 812603 3/3

ALESIS

ENGINEERING CHANGE NOTICE

DOCUMENT CONTROL RELEASE
JUN 24 1998
APPROVAL
ALESIS

ECN #: 817503 **DATE:** 23 JUNE 1998

PRODUCT: Q3 **ASSY:** 9-79-1362 REV C

CHANGE TO BE MADE

WAS P/N ______ REV	**IS** P/N ______ REV
Due to ECN # 812603, a resistor (0-11-1001) was added to connect the pads of R109 and R110.	Change the value of this resistor to 0-11-1002.

REASON FOR CHANGE: Changing the value of this resistor from 1KΩ to 10KΩ improves the power-up circuit of the unit. The unit will be able to accept nominal input voltages as low as 100VRMS before Power Fail is asserted.

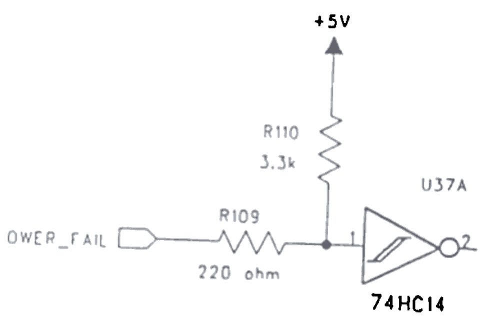
SPECIAL INSTRUCTIONS: Number of pages: 2

ROJECT ENGINEER: Mark Harada

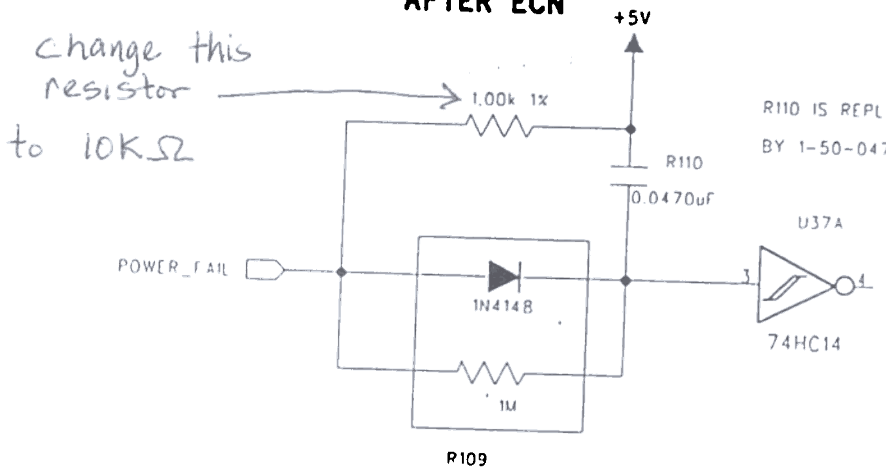
MANUF. COORDINATOR:

REVISION RECORD			
LTR.	ECO NO:	APPROVED:	DAT

BEFORE ECN



AFTER ECN



R110 IS REPLACED BY 1-50-0473

R109 IS REPLACED BY 2-50-414B AND 0-10-0105

COMPANY: ALESIS		
TITLE: 03 ECN FOR POWER-UP RESET CIRCUIT		
DRAWN: MARK HARADA	DATED:	PART NUMBER:
RELEASED:	DATED:	ASSY NUMBER:
		FILENAME:

ECN # 817503 P.2/2

ALESIS

ENGINEERING CHANGE NOTICE

DOCUMENT CONTROL RELEASE
JUL 10 1998
APPROVAL
ALESIS

ECN #: 819101

DATE: July 9, 1998

PRODUCT: Q3

ASSY: 9-79-1362 REVC

CHANGE TO BE MADE

WAS P/N ______ REV ____	: IS P/N 0-05-0101 REV ____
	Add a 100Ω ½W resistor 5% across capacitor C97.

REASON FOR CHANGE: Provides sufficient draw of power from the B4 power supply to meet its minimum load requirement.

SPECIAL INSTRUCTIONS: Number of pages: 1

EFFECTIVE IMMEDIATELY, REWORK INVENTORY.
THIS APPLY TO REV. C MAIN PCB.

PROJECT ENGINEER: Mark Harada (signature) W.M

MANUF. COORDINATOR: (signature)

ALESIS

ENGINEERING CHANGE NOTICE

DOCUMENT CONTROL RELEASE
JUL 28 1998
APPROVAL
ALESIS

ECN #: 820901 **DATE:** July 23, 1998

PRODUCT: Q3 **ASSY:** 9-79-1362
Q3 MAIN ASSY.

CHANGE TO BE MADE

WAS P/N ____ REV ____	IS P/N ____ REV ____
2-31-0084 EPROM software verion V1.00	2-31-0084 EPROM software V1.01

REASON FOR CHANGE: Change of software corrects footswitch advance problems at user programs 0-83, 0-88, and 1-55.

SPECIAL INSTRUCTIONS: **Number of pages:** 1

EFFECTIVE IMMEDIATELY.

PROJECT ENGINEER: Mark Harada

MANUF. COORDINATOR: 7/28/98

ALESIS

ENGINEERING CHANGE NOTICE

DOCUMENT CONTROL RELEASE
OCT 15 1998
APPROVAL
ALESIS

ECN #: 828801 **DATE:** 10/13/98

PRODUCT: Q3 **ASSY:** 9-79-1362
Q3 MAIN ASSY

CHANGE TO BE MADE

WAS P/N ____ REV ____	IS P/N ____ REV
1 9-40-1362-C PCB MAIN Q3 REV.C	1 9-40-1362-D PCB MAIN Q3 REV.D
2. 0-05-0101 RES 100 OHM 1/2W 5% REF. DESG: (C97)	2. 0-05-0101 RES 100 OHM 1/2W 5% REF. DESG: (R150)
3. 0-10-0105 RES 1M OHM 1/8W 5% 1206 QTY: (1) REF DESG: R99	3. 0-10-0105 RES 1M OHM 1/8W 5% 1206 QTY: (2) REF DESG: R99, R109
4. 0-11-1002 RES 10K OHM 1/8W 1% 1206 QTY: (21)	4. 0-11-1002 RES 10K OHM 1/8W 1% 1206 QTY: (20). DELETE REF DESG: R109
5. 1-50-0473 CAP 0.047uF 1206 NPO QTY: (1) REF DESG: C19	5. 1-50-0473 CAP 0.047uF 1206 NPO QTY: (2) REF DESG: C19, C105
6. 2-50-41480 DIODE SIGNAL LS4148 SMD QTY: (18)	6. 2-50-41480 DIODE SIGNAL LS4148 SMD QTY: (19)
7. 0-10-0000 RES 0 OHM 1/8W 5% 1206 QTY: 1	7. NONE (DELETE)

REASON FOR CHANGE:

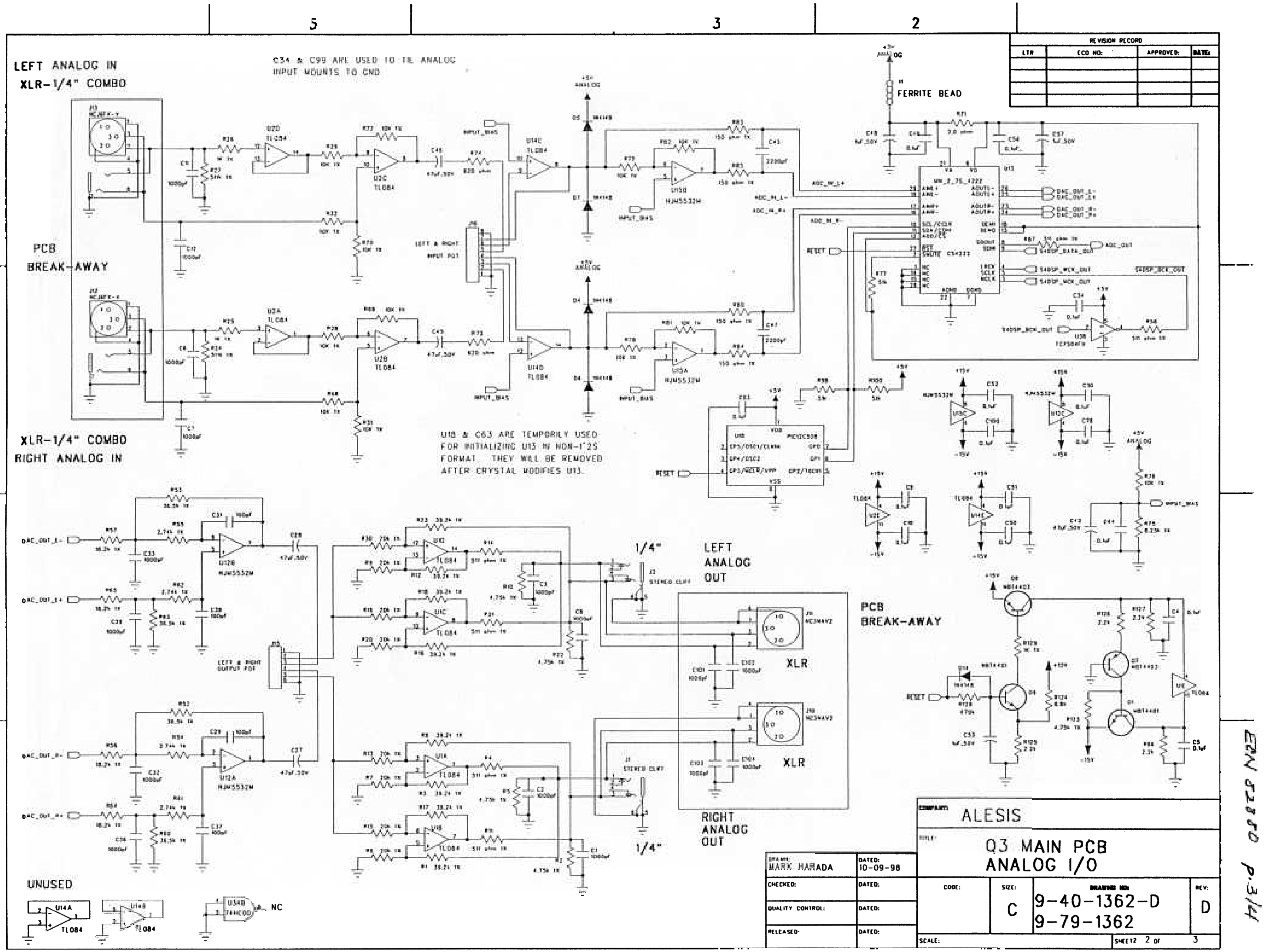
REV. D PCB IS TO INCORPORATE ALL THE. MOD. CHANGES FROM ECN#812603, 811201, 819101, 817503, AND TO UPDATE BOM TO MATCH ACUTAL BUILD

SPECIAL INSTRUCTIONS: Number of pages: 4 total

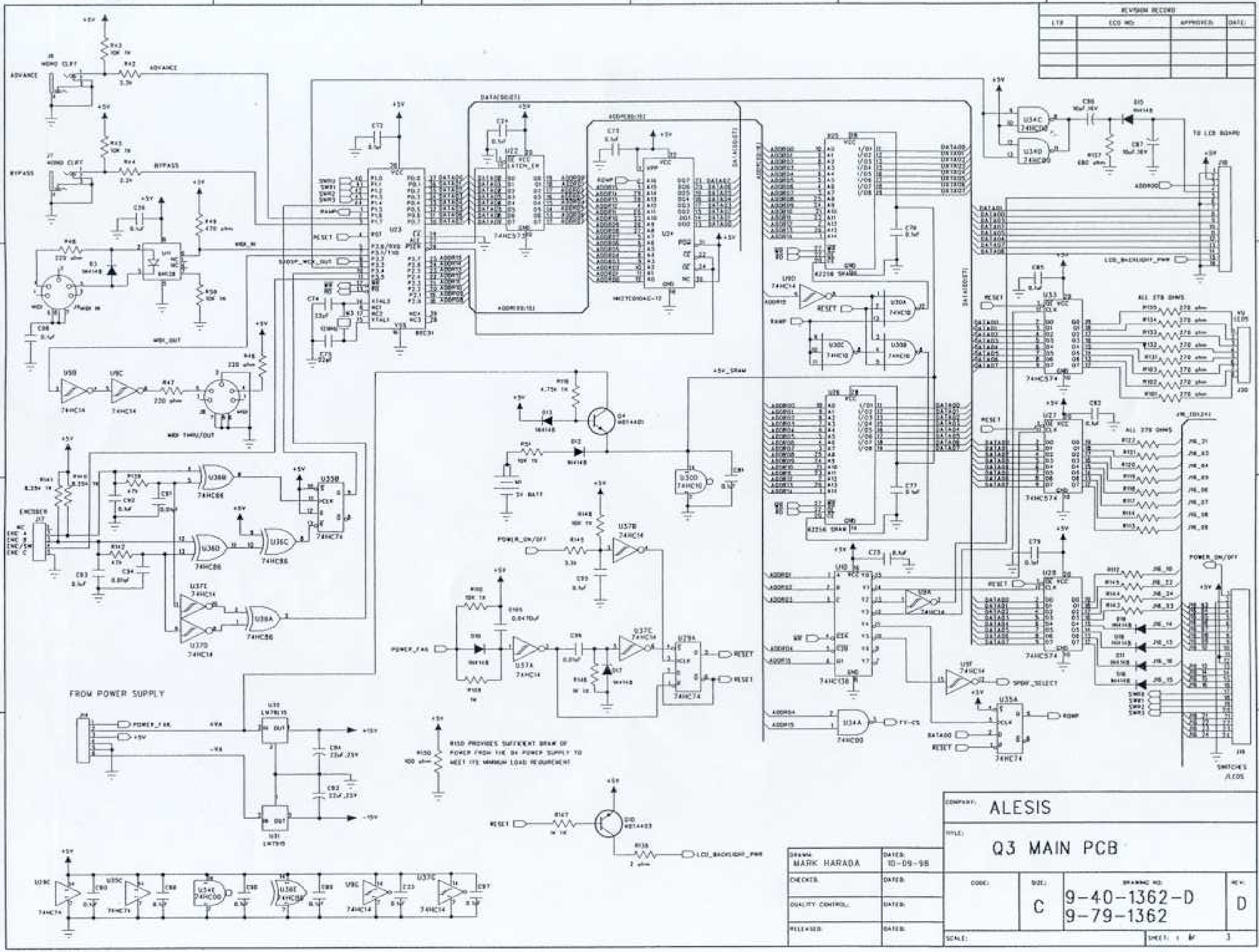
RUNNING CHANGE, EFFECTIVE WO Q31298

PROJECT ENGINEER: [signature]

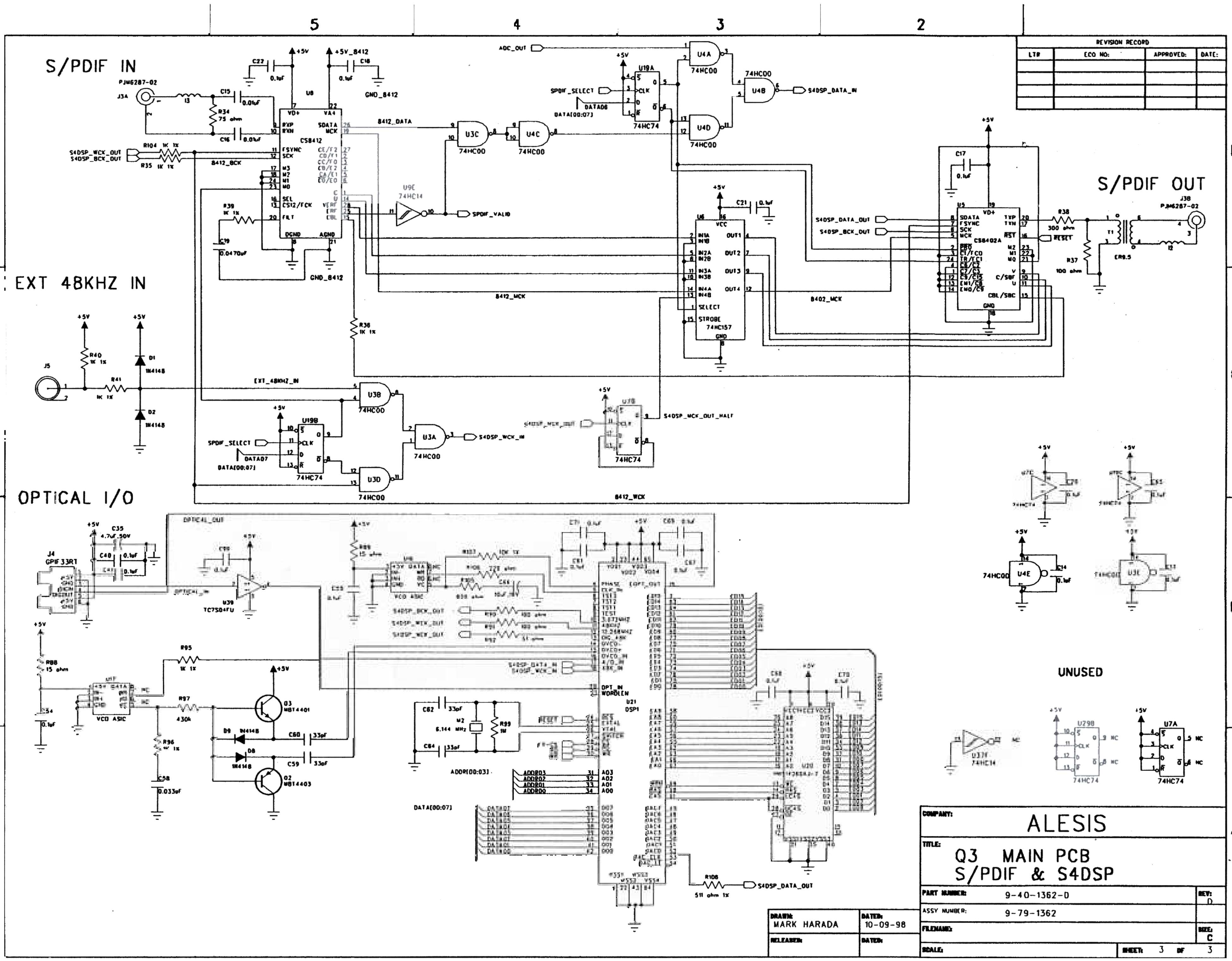
MANUF. COORDINATOR: [signature] WM.



LEFT ANALOG IN
XLR-1/4" COMBO
C34 & C99 ARE USED TO TIE ANALOG INPUT MOUNTS TO GND
PCB BREAK-AWAY
XLR-1/4" COMBO
RIGHT ANALOG IN
FERRITE BEAD
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
LEFT & RIGHT INPUT POT
U18 & C63 ARE TEMPORILY USED FOR INITIALIZING U13 IN NON-I²S FORMAT. THEY WILL BE REMOVED AFTER CRYSTAL MODIFIES U13.
RESET
1/4"
LEFT ANALOG OUT
STEREO CLIFF
PCB BREAK-AWAY
XLR
XLR
LEFT & RIGHT OUTPUT POT
RIGHT ANALOG OUT
1/4"
UNUSED
NC
TL084
NJM5532M
INPUT_BIAS
DAC_OUT_L-
DAC_OUT_L+
DAC_OUT_R-
DAC_OUT_R+
COMPANY: ALESIS
TITLE: Q3 MAIN PCB ANALOG I/O
DRAWN: MARK HARADA
DATED: 10-09-98
CHECKED:
DATED:
QUALITY CONTROL:
DATED:
RELEASED:
DATED:
CODE:
SIZE: C
DRAWING NO: 9-40-1362-D 9-79-1362
REV: D
SCALE:
SHEET 2 OF 3
ECN 52850 P.3/4



EDM 828801 p.4/4



ECN 828801 p.2/4

ALESIS

ENGINEERING CHANGE NOTICE

DOCUMENT CONTROL RELEASE JUN 09 1999 APPROVAL ALESIS

ECN #: 916003 **DATE:** 6/2/99

PRODUCT: Q3 **ASSY:** 9-79-1362
Assy. PCB main Q3.

CHANGE TO BE MADE

WAS P/N ______ REV ______	**IS** P/N ______ REV ______
MOD: (see attachment for more details)	MOD: see attachment for more details)
Replace R97: (430K) 0-10-0434 Res 430K Ohm 1/8W 5% 1206	1. TO R97: (3M) 0-10-0305 Res 3M Ohm 1/8W 5% 1206

2. a) LIFT U5 —PIN 6 from PCB
   -now is floated.
   (no cutting traces are required)

   b) Connected a jumper wire between U5 PIN-6 (Floated) to R35 right side, which connected to U8 PIN-12.

REASON FOR CHANGE: MOD: FIX CLICKING/POPPING SOUNDS FROM OPTICAL INPUT & S/PDIF I/O.

SPECIAL INSTRUCTIONS: Number of pages: 2

Effective immediately. Update BOM.

Rework all WIP.

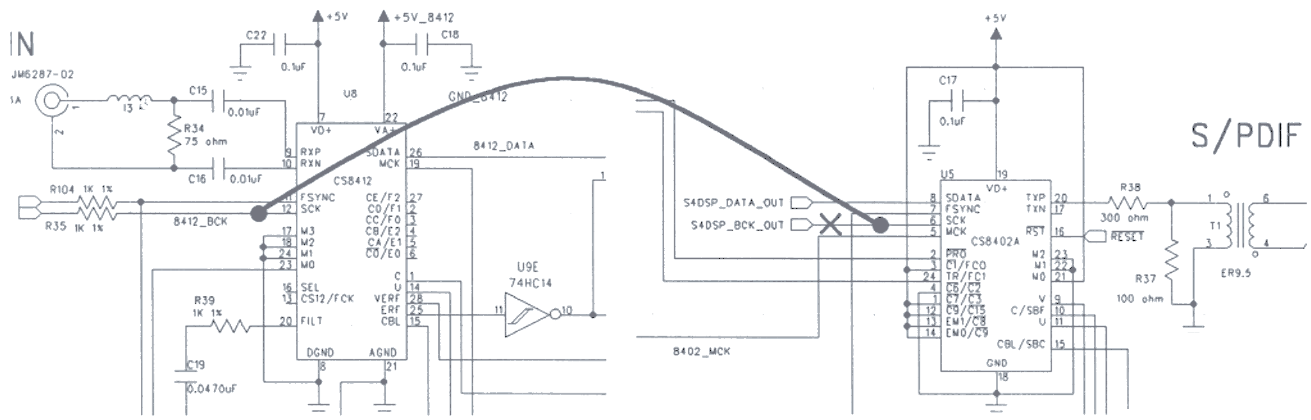
Rework all finish goods.

PROJECT ENGINEER: Alan? Meyer

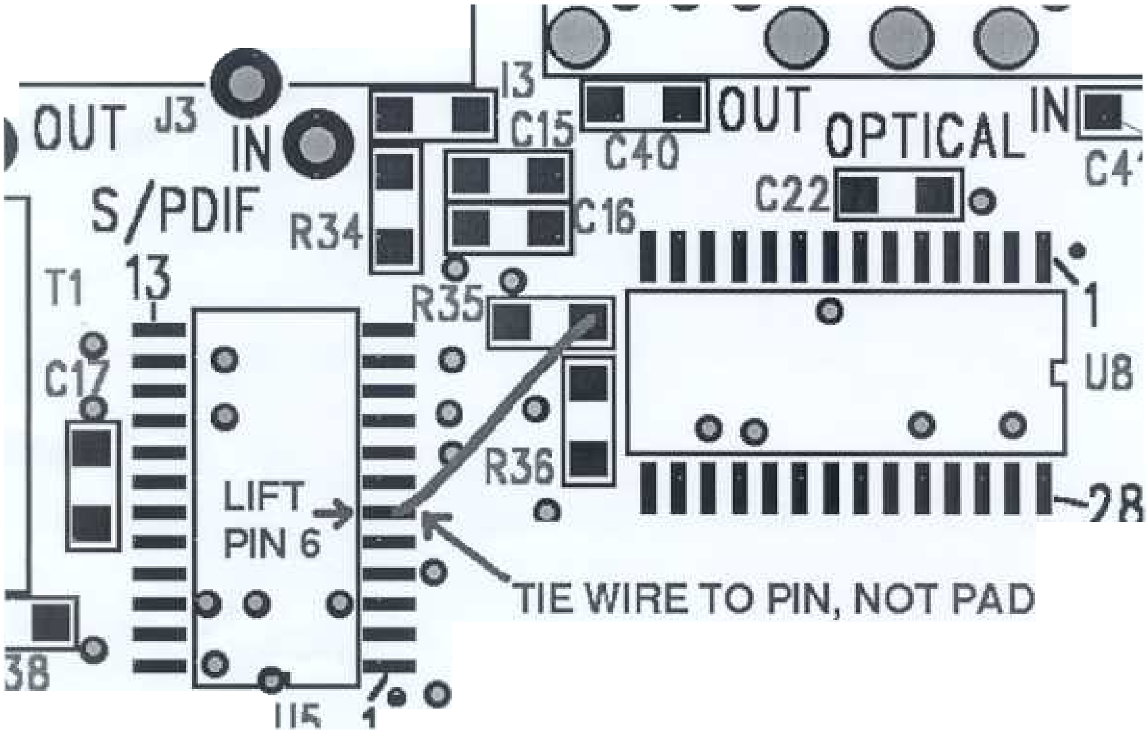
MANUF. COORDINATOR: Henry Dang

MOD:

1. Change R97 value from 430K to 3M ohm.
2. LIFT U5 PIN-6 from PCB (FLOATED).
3. Connect jumper wire from U5 PIN-6 (FLOATED) to R35 RIGHT SIDE. (which connected to U8 PIN-12.)



On the PCB side, the fix looks something like this:



ALESIS
Q20 (Q3)

BOM

PARENT_PN	COMPONENT	DESC	QTY	REF DES
Q3	0-10-0479	RES 4.7 OHM 1/8W 5% 1206	2	R110 R124
Q3	4-18-1403	CABLE DIL 16-PIN 0.1 6	1	
Q3	4-18-1623	CABLE DIL RIBBON 24-PIN 0.1 98mm	1	
Q3	4-19-0600	CABLE SIL 6-PIN 3.96mm 90mm SPC	1	P/S PCB - MAIN
Q3	4-19-0602	CABLE SIL 6-PIN 2mm 135mm SHIELDED	1	
Q3	4-19-0800	CABLE SIL 8-PIN 2mm 170mm SHIELDED	1	
Q3	4-19-1333	CABLE SIL 5-PIN 70mm	1	
Q3	4-19-1334	CABLE SIL 8-PIN 160mm	1	
Q3	5-00-0027	SCREW M3 x 5mm PPZ	4	(4) MAIN PCB
Q3	5-00-0151	SCREW M3 x 7mm PHIL-SLOT TRUSS BLK	15	CASE XLR
Q3	5-00-1020	SCREW M4 x 10mm PPB BT TAPTITE	2	IEC
Q3	5-00-1021	SCREW M3 x 8mm PPB BT TAPTITE	6	OPTICAL JACK (BLK) RCA DUAL XLR
Q3	5-02-6328	NUT KEP M3 STEEL/ZINC	1	(1) Grnd wire to bot panel
Q3	7-50-0001	STICKER BARCODE S/N Q3	1	
Q3	7-51-0012	MANUAL REFERENCE Q3	1	
Q3	7-51-0013	CHART PRESET PROGRAM - VER 1.00 Q3	1	
Q3	7-51-0014	CHART USER 0 PROGRAM - VER 1.00 Q3	1	
Q3	7-51-0015	CHART USER 1 PROGRAM - VER 1.00 Q3	1	
Q3	7-51-0016	QUICK REFERENCE GUIDE Q3	1	
Q3	7-51-1248	BROCHURE CLOTHING/ACCESSORIES	1	
Q3	7-52-0001	STICKER UL/FCC - REV B Q3/U1	1	
Q3	7-80-0005	BOX CARDHOLDER P/S	1	
Q3	7-80-0169	BOX GIFT Q3	1	
Q3	7-81-0104	FOAM ENDCAP RIGHT SINGLE-RACK STD	1	
Q3	7-81-0105	FOAM ENDCAP LEFT SINGLE-RACK STD	1	
Q3	7-91-1002	GEL SILICA 5G PACKET	2	
Q3	7-94-0912	POLYBAG 9 x 12 - 4 MIL	1	LITERATURE
Q3	7-94-0924	POLYBAG 9 x 24 - 4 MIL	1	PKG
Q3	9-02-1007	RACK EAR (CURVED FRONT-PANEL)	2	
Q3	9-03-0015	FRONT-PANEL Q3	1	
Q3	9-03-1100	CASE TOP	1	
Q3	9-03-1165	CLIP STRIP RETAINER	8	
Q3	9-08-0010	CASE BOTTOM Q3	1	
Q3	9-13-0020	STRIP RETAINER 6.35x20mm D5	4	F/P ASSY
Q3	9-13-1028	STRIP PVC 159mm X 7.5mm	2	F/P ASSY
Q3	9-15-1113	KNOB CONCENTRIC UPPER	1	F/P ASSY
Q3	9-23-1014	STRIP FOAM FRONT-PANEL 7 x 180mm	4	
Q3	9-23-1017	STRIP FOAM SIDE 7 x 95mm	4	

PARENT_PN	COMPONENT	DESC	QTY	REF DES
Q3	9-44-1113	ASSY LCD	1	
**LEVEL 2				
9-44-1113	0-15-0102	RES 1K OHM 1/10W 5% 0805	5	R1-5
9-44-1113	0-15-0913	RES 91K OHM 1/10W 5% 0805	1	R6
9-44-1113	1-56-0104	CAP 0.1uF X7R 0805 10% 50V	1	C1
9-44-1113	2-74-0063	DRIVER LCD 80-SEG KS0063 QFP-100	1	U1
9-44-1113	2-74-0066	DRIVER LCD 40-SEG KS0066	1	U2
9-44-1113	2-74-4410	IC HD44100F LCD DRIVER QFP-60	1	U3
9-44-1113	3-02-0007	LED ORANGE 2x5mm RECT.	2	VU
9-44-1113	3-02-0009	LED GREEN 2x5mm RECT	6	VU
9-44-1113	4-14-0016	HEADER DIL 16-PIN 0.1	1	
9-44-1113	4-15-1005	HEADER SIL 5-PIN 2mm SHRD	1	
9-44-1113	4-15-1008	HEADER SIL 8-PIN 2mm SHRD	1	
9-44-1113	5-00-2005	SCREW M2.6 x 6mm KEYPAD	4	
9-44-1113	9-00-1010	ENCODER ROTARY 11mm-SHAFT HORIZONTAL W/ SWITCH	1	
9-44-1113	9-11-1039	BEZEL VU	1	
9-44-1113	9-11-1040	BEZEL DISPLAY	1	
9-44-1113	9-15-0097	DIFFUSER BACKLIGHT - REV B	1	
9-44-1113	9-15-1109	FRAME DISPLAY	1	
9-44-1113	9-15-1115	KNOB VALUE	1	
9-44-1113	9-40-1154	PCB ENCODER	1	
9-44-1113	9-40-1178	PCB LCD DRIVER - REV B	1	
9-44-1113	9-60-0001	CABLE HEAT-SEAL 68.40 x 40.0mm 124-TRACES S4	2	
9-44-1113	9-96-1262-B	ASSY BACKLIGHT - REV B	1	
9-44-1113	9-99-0009	GLASS LCD DOUBLE-DRIVEN - REV B	1	
Q3	9-79-1153	ASSY PCB POT Q3	1	
**LEVEL 2				
9-79-1153	0-09-1001	POT 10KA DUAL +/-20%	1	R2
9-79-1153	0-09-1033	POT 10KB DUAL CONCENTRIC	1	R1
9-79-1153	4-15-1006	HEADER SIL 6-PIN 2mm SHRD	1	J2
9-79-1153	4-15-1008	HEADER SIL 8-PIN 2mm SHRD	1	J1
9-79-1153	9-15-1111	FRAME POT	1	
9-79-1153	9-15-1112	KNOB STANDARD	1	
9-79-1153	9-15-1113	KNOB CONCENTRIC UPPER	1	
9-79-1153	9-15-1114	KNOB CONCENTRIC LOWER Q2	1	
9-79-1153	9-40-1153	PCB POT Q2	1	

PARENT_PN	COMPONENT	DESC	QTY	REF DES
Q3	9-79-1362	ASSY PCB MAIN Q3	1	
**LEVEL 2				
9-79-1362	0-05-0101	RES 100 OHM 1/2W 5%	1	R150
9-79-1362	0-05-0209	RES 2 OHM 1/2W 5%	1	R138
9-79-1362	0-10-0101	RES 100 OHM 1/8W 5% 1206	3	R37 R90 R91
9-79-1362	0-10-0105	RES 1M OHM 1/8W 5% 1206	2	R99 R109
9-79-1362	0-10-0150	RES 15 OHM 1/8W 5% 1206	2	R88-89
9-79-1362	0-10-0209	RES 2.0 OHM 1/8W 5% 1206	1	R71
9-79-1362	0-10-0221	RES 220 OHM 1/8W 5% 1206	4	R46-48 R106
9-79-1362	0-10-0222	RES 2.2K OHM 1/8W 5% 1206	6	R42 R44 R86 R125-127
9-79-1362	0-10-0271	RES 270 OHM 1/8W 5% 1206	20	R101-103 R112-114 R117-122 R131-135 R143-145
9-79-1362	0-10-0301	RES 300 OHM 1/8W 5% 1206	1	R38
9-79-1362	0-10-0305	RES 3M OHM 1/8W 5% 1206	1	R97
9-79-1362	0-10-0332	RES 3.3K OHM 1/8W 5% 1206	1	R149
9-79-1362	0-10-0471	RES 470 OHM 1/8W 5% 1206	1	R49
9-79-1362	0-10-0473	RES 47K OHM 1/8W 5% 1206	2	R139 R142
9-79-1362	0-10-0474	RES 470K OHM 1/8W 5% 1206	1	R128
9-79-1362	0-10-0510	RES 51 OHM 1/8W 5% 1206	1	R92
9-79-1362	0-10-0513	RES 51K OHM 1/8W 5% 1206	3	R77 R98 R100
9-79-1362	0-10-0621	RES 620 OHM 1/8W 5% 1206	2	R73-74
9-79-1362	0-10-0681	RES 680 OHM 1/8W 5% 1206	1	R137
9-79-1362	0-10-0682	RES 6.8K OHM 1/8W 5% 1206	1	R124
9-79-1362	0-10-0750	RES 75 OHM 1/8W 5% 1206	1	R34
9-79-1362	0-10-0821	RES 820 OHM 1/8W 5% 1206	1	R105
9-79-1362	0-11-1001	RES 1.00K OHM 1/8W 1% 1206	13	R25-26 R35-36 R39-41 R95 R96 R104 R129 R146-147
9-79-1362	0-11-1002	RES 10.0K OHM 1/8W 1% 1206	20	R28-29 R31-32 R43 R45 R50-51 R68-70 R72 R76 R78-79 R81-82 R107 R110 R148
9-79-1362	0-11-1500	RES 150 OHM 1/8W 1% 1206	4	R80 R83-85
9-79-1362	0-11-1822	RES 18.2K OHM 1/8W 1% 1206	4	R56-57 R64-65
9-79-1362	0-11-2002	RES 20K OHM 1/8W 1% 1206	8	R6-7 R9 R13 R15 R19-20 R30
9-79-1362	0-11-2741	RES 2.74K OHM 1/8W 1% 1206	4	R54-55 R61-62
9-79-1362	0-11-3652	RES 36.5K OHM 1/8W 1% 1206	4	R52-53 R60 R63
9-79-1362	0-11-3922	RES 39.2K OHM 1/8W 1% 1206	8	R1 R3 R8 R12 R16-18 R23
9-79-1362	0-11-4751	RES 4.75K OHM 1/8W 1% 1206	6	R2 R5 R10 R22 R116 R123
9-79-1362	0-11-5110	RES 511 OHM 1/8W 1% 1206	7	R4 R11 R14 R21 R58 R87 R108
9-79-1362	0-11-5113	RES 511K OHM 1/8W 1% 1206	2	R24 R27
9-79-1362	0-11-8251	RES 8.25K OHM 1/8W 1% 1206	3	R75 R140-141
9-79-1362	1-08-0101	CAP 10uF ELEC 16V 2x5x11mm	3	C66 C86-87
9-79-1362	1-09-0022	CAP 22uF ELEC 35V 2x5x11mm	2	C83-84
9-79-1362	1-09-0105	CAP 1.0uF ELEC 25V 2x5x11mm	3	C48 C53 C57
9-79-1362	1-11-0476	CAP 47uF ELEC 50V 2.5x6.3x11mm	5	C27-28 C42 C45-46
9-79-1362	1-12-0471	CAP 4.7uF ELEC 63V 2x5x11mm	1	C35
9-79-1362	1-50-0101	CAP 100pF NPO 1206	4	C29 C31 C37 C38
9-79-1362	1-50-0102	CAP 1000pF NPO 1206	16	C1-3 C6-8 C11-12 C32-33 C36 C39 C101-104
9-79-1362	1-50-0103	CAP 0.01uF NPO 1206	5	C15-16 C91 C94 C96
9-79-1362	1-50-0104	CAP 0.1uF NPO 1206	53	C4-5 C9-10 C13-14 C17-18 C20-26 C30 C34 C40-41 C44 C50-52 C54-55 C61 C63 C65 C67-73 C76-82 C85 C88-90 C92-93 C95 C97-98 C99 C100
9-79-1362	1-50-0220	CAP 22pF NPO 1206	2	C74-75
9-79-1362	1-50-0222	CAP 2200pF NPO 1206 50V	2	C43 C47
9-79-1362	1-50-0330	CAP 33pF NPO 1206	4	C59-60 C62 C64

PARENT_PN	COMPONENT	DESC	QTY	REF DES
9-79-1362	1-50-0334	CAP 0.033uF NPO 1206	1	C58
9-79-1362	1-50-0473	CAP 0.047uF NPO 1206	2	C19 C105
9-79-1362	1-56-0104	CAP 0.1uF X7R 0805 10% 50V	2	C49 C56
9-79-1362	2-13-7815	REG VOLTAGE LM78L15 +15V TO-92	1	U32
9-79-1362	2-13-7915	REG VOLTAGE LM7915 -15V TO-92	1	U31
9-79-1362	2-24-0138	IC OPTO-ISOLATOR 6N138	1	U11
9-79-1362	2-27-0022	ASIC DSP1 DIG-FX 84-PIN	1	U21
9-79-1362	2-27-0035	ASIC PCVCO (TESTED)	2	U16-17
9-79-1362	2-31-0084	IC SOFTWARE EPROM Q3 (V1.01)	1	U24
9-79-1362	2-50-4148	DIODE SIGNAL LS4148 MELF	19	D1-19
9-79-1362	2-51-4401	TRANS NPN 2N4401 40V 1A SOT-23	4	Q1 Q3-4 Q9
9-79-1362	2-51-4403	TRANS PNP 2N4403 40V 800mA SOT-23	4	Q2 Q7-8 Q10
9-79-1362	2-64-0138	IC 74HC138 3-8 DECODER/DEMUX SOP-16	1	U10
9-79-1362	2-64-0157	IC 74HC157 QUAD 2-1 DATA SELECT/MUX SOP-16	1	U6
9-79-1362	2-64-0573	IC 74HC573 OCTAL D-LATCH W/TRI-STATE OUTS SOP-20	1	U22
9-79-1362	2-64-0574	IC 74HC574 OCTAL D-FF W/ TRI-STATE OUTS SOP-20	3	U27-28 U33
9-79-1362	2-64-7400	IC 74HC00 QUAD 2-IN POS-NAND SOP-14	3	U3-4 U34
9-79-1362	2-64-7410	IC 74HC10 TRIPLE 3-IN NAND SOP-14	1	U30
9-79-1362	2-64-7414	IC 74HC14 HEX INVERTER SOP-14	2	U9 U37
9-79-1362	2-64-7474	IC 74HC74 DUAL D FF SOP-14	4	U7 U19 U29 U35
9-79-1362	2-64-7486	IC 74HC86 QUAD 2-IN XOR SOP-14	1	U36
9-79-1362	2-65-0704	IC TC7S04FU SINGLE HIGH-SPEED INVERTER SSOP-5	2	U38 U39
9-79-1362	2-66-5160	IC DRAM 256K x 16 70nS FAST PAGE MODE SOJ-40	1	U20
9-79-1362	2-67-0257	IC SRAM 32Kx8 70nS 62256 SOIC-28	2	U25-26
9-79-1362	2-70-8032	IC MPU 80C31 60Mhz PQFP-44	1	U23
9-79-1362	2-71-0084	IC TL084 QUAD OPAMP SOP-14	3	U1-2 U14
9-79-1362	2-71-0532	IC NJM5532M DUAL OP-AMP SOP-8 0.2	2	U12 U15
9-79-1362	2-75-4222	IC CODEC CS4222 STEREO W/VOL-CTRL 20-BIT SSOP-28	1	U13
9-79-1362	2-79-0508	IC CONTROLLER 8-BIT CMOS SOIC-8 (PROGRAMMED)	1	U18
9-79-1362	2-81-8402	IC CS8402 DIGITAL AUDIO INTERFACE XMTR SOIC-24	1	U5
9-79-1362	2-81-8412	IC CS8412-CS DIGITAL AUDIO INTERFACE RCVR SOIC-28	1	U8
9-79-1362	4-00-0002	JACK DIN 5-PIN MIDI PCB MOUNT 180° W/SHIELD	2	J8-9
9-79-1362	4-01-0006	JACK RCA 2-PIN DUAL FEMALE W/SHIELD-PLATE	1	J3
9-79-1362	4-02-0001	JACK 1/4 MONO	2	J6-7
9-79-1362	4-03-0001	JACK 1/4 STEREO	2	J1-2
9-79-1362	4-04-0003	CON BNC (WAKA)	1	J5
9-79-1362	4-05-0012	JACK XLR 3-PIN MALE PCB-MNT 180°	2	J10-11
9-79-1362	4-05-0017	JACK XLR-1/4 3-PIN FEMALE VERT PCB-MNT	2	J12-13
9-79-1362	4-06-0032	SOCKET 32-PIN DIP 0.6	1	U24
9-79-1362	4-11-0001	CON FIBER-OPTIC 2-CHAN TRANS/RECEIVER	1	J4
9-79-1362	4-14-0016	HEADER DIL 16-PIN 0.1	1	J18
9-79-1362	4-14-0024	HEADER DIL 24-PIN 0.1	1	J19
9-79-1362	4-15-0600	HEADER SIL 6-PIN 3.96mm MALE EXT-LOCKING	1	J14
9-79-1362	4-15-1005	HEADER SIL 5-PIN 2mm SHRD	1	J17
9-79-1362	4-15-1006	HEADER SIL 6-PIN 2mm SHRD	1	J15
9-79-1362	4-15-1008	HEADER SIL 8-PIN 2mm SHRD	2	J16 J20
9-79-1362	4-19-1403	CABLE 3-LEAD 40mm STRIPPED & TINNED	4	
9-79-1362	5-04-0045	SPACER CRYSTAL 5x11.25x1mm (TQ-06 PIN-GOOD)	2	M2-3
9-79-1362	7-01-0009	CRYSTAL 12 MHz 13mm	1	M3
9-79-1362	7-01-0011	CRYSTAL 6.144 MHz SERIES	1	M2
9-79-1362	7-05-0003	BATTERY 3V LITHIUM COIN-TYPE PCB-MNT 23mmOD 2.5mmTHK	1	M1
9-79-1362	7-30-0009	FERRITE CHIP BEAD 200mA 1206	3	I1 I2 I3
9-79-1362	7-40-8865	TRANSFORMER 1-10 mHz PULSE 1:1	1	T1
9-79-1362	9-03-1036	LUG SOLDER PCB MNT	4	J1-2 J6-7
9-79-1362	9-40-1362-D	PCB MAIN Q3 - REV D	1	
9-79-1362	9-56-0001	LUG SOLDER VERTICAL XLR	2	J10-11

PARENT_PN	COMPONENT	DESC	QTY	REF DES
Q3	9-79-1372	ASSY PCB FRONT-PANEL Q3	1	
**LEVEL 2				
9-79-1372	3-02-0014	LED RED HLMP-1340 T1	12	D1-12
9-79-1372	4-20-2400	HEADER DIL 24-PIN 0.1 SMD	1	J1
9-79-1372	5-00-2005	SCREW M2.6 x 6mm KEYPAD	2	
9-79-1372	6-02-0008	SWITCH TACT SPST SQUARE ACTUATOR	1	S3
9-79-1372	6-02-0011	SWITCH TACT TL1105T	16	S1-2 S4-17
9-79-1372	9-15-0039	BUTTON POWER Q3	1	
9-79-1372	9-40-1372-A	PCB FRONT-PANEL Q3 - REV A	1	

PARENT_PN	COMPONENT	DESC	QTY	REF DES
Q3	9-79-B401	ASSY PCB P/S 3/OUT 17.5/17.5/5 10W IEC65 B4	1	
**LEVEL 2				
9-79-B401	0-00-0100	RES 10 OHM 1/8W 5%	1	R4
9-79-B401	0-00-0102	RES 1K OHM 1/8W 5%	2	R7 R11
9-79-B401	0-00-0103	RES 10K OHM 1/8W 5%	1	R8
9-79-B401	0-00-0153	RES 15K OHM 1/8W 5%	2	R5 R12
9-79-B401	0-00-0154	RES 150K OHM 1/8W 5%	2	R1-2
9-79-B401	0-00-0272	RES 2.7K OHM 1/8W 5%	1	R10
9-79-B401	0-00-0332	RES 3.3K OHM 1/8W 5%	1	R16
9-79-B401	0-00-0363	RES 36K OHM 1/8W 5%	1	R17
9-79-B401	0-00-0470	RES 47 OHM 1/8W 5%	1	R21
9-79-B401	0-00-0752	RES 7.5K OHM 1/8W 5%	1	R6
9-79-B401	0-01-1273	RES 127K OHM 1/8W 1%	1	R18
9-79-B401	0-01-3652	RES 36.5K OHM 1/8W 1%	1	R26
9-79-B401	0-01-3923	RES 392K OHM 1/8W 1%	1	R25
9-79-B401	0-01-9531	RES 9.53K OHM 1/8W 1%	1	R20
9-79-B401	0-03-0102	RES 1K OHM 1/4W 5%	1	R9
9-79-B401	0-05-0159	RES 1.5 OHM 1/2W 5%	1	R13
9-79-B401	0-22-0100	THERMISTOR 10 OHM 2A NTC	1	RT1
9-79-B401	0-85-1124	RES 120K OHM 1W 5% CFR-OFFSET	1	R3
9-79-B401	0-95-0104	RES 100K OHM 1/2W 5% CFR-VM	1	R14
9-79-B401	0-95-0222	RES 2.2K OHM 1/2W 5% CFR-VM	1	R15
9-79-B401	0-97-1872	RES 18.7K OHM 1/8W 1% MF	1	R19
9-79-B401	1-02-0223	CAP 0.022uF CERDISC 10% 50V Z5U 5x9x2mm	3	C13 C22 C23
9-79-B401	1-02-0472	CAP 4700pF CERDISC Z5U 10% 50V 5x9x2mm	1	C11
9-79-B401	1-02-1333	CAP 3300pF CERDISC 20% 100V 5x8x3mm	1	C14
9-79-B401	1-02-1689	CAP 68pF CERDISC 20% 1KV 5x8x3mm	1	C9
9-79-B401	1-02-4713	CAP 470pF CERDISC Y5F 20% 1KV 5x5x3mm	1	C10
9-79-B401	1-02-5103	CAP 0.01uF CERDISC 20% 500V 5x5x2mm	1	C8
9-79-B401	1-13-0682	CAP 68uF ELEC 400V 10x22x25mm	1	C6
9-79-B401	1-14-0683	CAP 0.068uF X2-CAP 275V 15x18x5x11mm	2	C1-2
9-79-B401	1-15-2102	CAP 1000pF Y-CAP 250VAC 5x6.5x4.5mm	3	C3-5
9-79-B401	1-16-0223	CAP 220uF ELEC LOW-ESR 35V 105°C 3.5x8x20mm	4	C15-16 C19-20
9-79-B401	1-16-0224	CAP 2200uF ELEC LOW-ESR 10V 105°C 5x12.5x25mm	2	C17-18
9-79-B401	1-16-0472	CAP 47uF ELEC LOW-ESR 35V 105°C 2.5x6.3x11mm	1	C7
9-79-B401	1-21-0104	CAP 0.1uF MONO 20% 50V RADIAL	2	C12 C21
9-79-B401	2-00-4148	DIODE SIGNAL 1N4148 75V 200mA	2	D5 D11
9-79-B401	2-01-0120	DIODE POWER ULTRA-FAST MUR120 200V 1A	2	D7 D9
9-79-B401	2-01-4007	DIODE POWER 1N4007 1000V 1A	4	D1-4
9-79-B401	2-01-5822	DIODE SCHOTTKY 1N5822 40V 3A	1	D8
9-79-B401	2-02-0003	DIODE ZENER 1N4743 13V 1W D0-41	1	D13
9-79-B401	2-02-0560	DIODE ZENER 5.6V 500mW DO35	1	D10
9-79-B401	2-02-0600	DIODE POWER ULTRAFAST MUR160 600V 1A	1	D6
9-79-B401	2-03-4401	TRANS NPN GEN-PURPOSE-AMP 2N4401 40V 1A TO-92	1	Q3
9-79-B401	2-05-0001	TRANS POWER ULTRAFAST IGBT HGTP3N60B3 600V 3A	1	Q1
9-79-B401	2-06-0001	SCR 50V 8A TO-220	1	Q2
9-79-B401	2-10-3844	IC MODULATOR UC3844N	1	U1
9-79-B401	2-11-0431	REG ADJ-SHUNT TL431 2.5V-36V 100mA 2% TO-92	1	U3
9-79-B401	2-24-8104	IC OPTO-ISOLATOR TCDT1124 6-PIN	1	U2
9-79-B401	2-99-0021	DIODE BAV21 SOD-27	1	D12
9-79-B401	4-09-0300	CON POWER 3-PIN AC PCB-MOUNT W/REAR GRND LUG	1	J1
9-79-B401	4-15-0600	HEADER SIL 6-PIN 3.96mm MALE EXT-LOCKING	1	J4
9-79-B401	4-50-0003	WIRE 18AWG 56mm STRANDED RING-TO-TINNED	1	J1 GND LUG
9-79-B401	4-50-0450	WIRE JUMPER 22AWG 0.450 BARE	2	JW1 JW2
9-79-B401	4-51-2200	WIRE JUMPER 22AWG 2.2 MIN INSUL:0.4mm	1	JW3
9-79-B401	5-00-0008	SCREW 4-40 x 5/16 PPB	2	(2)J1
9-79-B401	5-00-0020	SCREW M3 x 7mm PPB PHIL-SLOT	2	STANDOFFS
9-79-B401	5-00-0066	SCREW 4-40 x 3/8 PPB	1	Q1

PARENT_PN	COMPONENT	DESC	QTY	REF DES
9-79-B401	5-01-0029	WASHER FLAT #4 ZINC 0.25OD	3	(2)J1 (1)Q1
9-79-B401	5-01-0035	WASHER #4 SHOULDER NYLON .140 OD X .116 ID X .090 L	1	(1) Q1
9-79-B401	5-02-4402	NUT HEX 4-40	3	(2)J1 (1)Q1
9-79-B401	5-03-0001	STANDOFF 6x24.5mm BRASS	2	
9-79-B401	5-04-0007	WASHER #4 SPLITLOCK	3	(2)J1 (1)Q1
9-79-B401	5-04-0050	RIVET SNAP 3.0mm DIA BLACK PLASTIC	1	THRU 7-07-0024 TO PCB
9-79-B401	5-05-1001	CLIP FUSE HOLDER 5 x 12mm	2	F1
9-79-B401	7-04-0004	FUSE 2A 250V 5x20mm F	1	F1
9-79-B401	7-07-0023	INSULATOR POLY-PAD 400 TO-220	1	Q1
9-79-B401	7-07-0024	INSULATOR 125x77.50mm POLYPROPOLYNE Q3	1	BOTTOM OF PCB
9-79-B401	7-07-0051	INSULATOR TUBING FRS 18AWG x .300 STANDARD WALL	1	R3
9-79-B401	7-07-0052	INSULATOR TUBING FRS 18AWG x .530 STANDARD WALL	2	R14-15
9-79-B401	7-13-0014	TUBING HEATSHRINK 5mm DIA x 15mm	1	J1 GND WIRE
9-79-B401	7-13-0032	TUBING HEATSHRINK 7mm x 11mm	3	C3-5
9-79-B401	7-30-0011	CHOKE COMMON MODE 0.65A 10mH	1	L1
9-79-B401	7-30-0012	CHOKE ROD OUTPUT 10uH 6A 1-HIGH	3	L2-4
9-79-B401	7-40-0004	TRANSFORMER HI-FREQ SWITCHING FLYBACK EI25-CORE	1	T1
9-79-B401	7-52-0002	STICKER FUSE 2A/250V 0.8 DIA.	1	TOP OF C6
9-79-B401	7-52-0016	STICKER UR/RATING - REV B B401	1	TOP OF J1
9-79-B401	7-53-0090	LABEL SYMBOL GND-TERM	1	
9-79-B401	9-03-0020	HEATSINK 66.5x25.0x25.0	1	HS1
9-79-B401	9-40-B401-A	PCB POWER SUPPLY 3/OUT 17.5/17.5/5 10W B4 - REV A	1	
Q3	9-96-1235	ASSY FRAME BUTTON	1	
**LEVEL 2				
9-96-1235	9-03-1109	PIN ROCKER Q2	1	
9-96-1235	9-15-0080	BUTTON ROCKER Q2	2	
9-96-1235	9-15-1110	FRAME BUTTON Q2	1	
9-96-1235	9-15-1116	BUTTON UPPER Q2	6	
9-96-1235	9-15-1123	BUTTON LOWER Q2	6	

ALESIS
Q20 (Q3)

HOT KEYS

Initialize RAM:

While turning power ON, hold down buttons PROGRAM, COMPARE, and BLOCK LEFT.

Soft Reset:

While turning power ON, hold down buttons PROGRAM and COMPARE. This will reinitialize options in the Global functions to their default values.

To display the software version:

With the power already turned ON, press and hold the GLOBAL button, and then press the PROGRAM button.

To enter Diagnostic Mode:

While turning power ON, hold down buttons PROGRAM and BLOCK RIGHT.

ALESIS
Q20 (Q3)

DIAGNOSTIC TESTS

List of Built-In Diagnostic Tests

1) **LED Test**

All front panel and VU LEDs light sequentially, and the Q20 displays "TEST FRONT PANEL LEDS…"

2) **Switches and Encoder Test**

The Q20 displays "TEST SWITCHES AND ENCODER…" Pressing individual front panel buttons toggles the LED for each button (**Block Left**, **Block Right**, **Page Left**, and **Page Right** toggle the LED of the adjacent button.). Holding any button down causes its associated LED to flash. All front panel LEDs are toggled if **Value/Enter** is pressed. Rotating **Value/Enter** in either the clockwise or counter-clockwise direction causes the front panel LEDs to rotate in the same direction. Press **Program** and **Block Right** simultaneously to exit to the next test.

3) **MIDI Test**

This test requires an external loop-back connection from the **In** MIDI jack to the **Out/Thru** MIDI jack. If the unit passes, the Q20 will display "MIDI OK." If the unit fails, the Q20 will display "*** MIDI JACK BAD ***" The unit will then proceed to the Processor SRAM Test.

4) **Processor SRAM Test**

If the unit passes, the Q20 will display "PROCESSOR SRAM OK." If the unit fails, the Q20 will display "*** PROCESSOR SRAM BAD ***" The unit will then proceed to the Optical Test.

5) **Optical Test**

The is test requires an external loop-back connection from the **Optical In** to the **Optical Out**. If the unit passes, the Q20 will display "OPTICAL OK." If the unit fails, the Q20 will display "*** OPTICAL BAD ***" The unit will then proceed to the Sample Hardware Test.

6) **Sample Hardware Test**

If the unit passes, the Q20 will display " SAMPLE HARDWARE OK." If the unit fails, the Q20 will display "*** SAMPLE HARDWARE BAD ***" The unit will then proceed to the Checksum Test.

7) **Checksum Test**

If the unit passes, the Q20 will display "CHECKSUM OK." If the unit fails, the Q20 will display "*** CHECKSUM BAD ***" The unit will remain in this state unit the **Program** and **Block Right** buttons are pressed. This exits the diagnostic test.

Additional Test Procedures

Audio Testing:

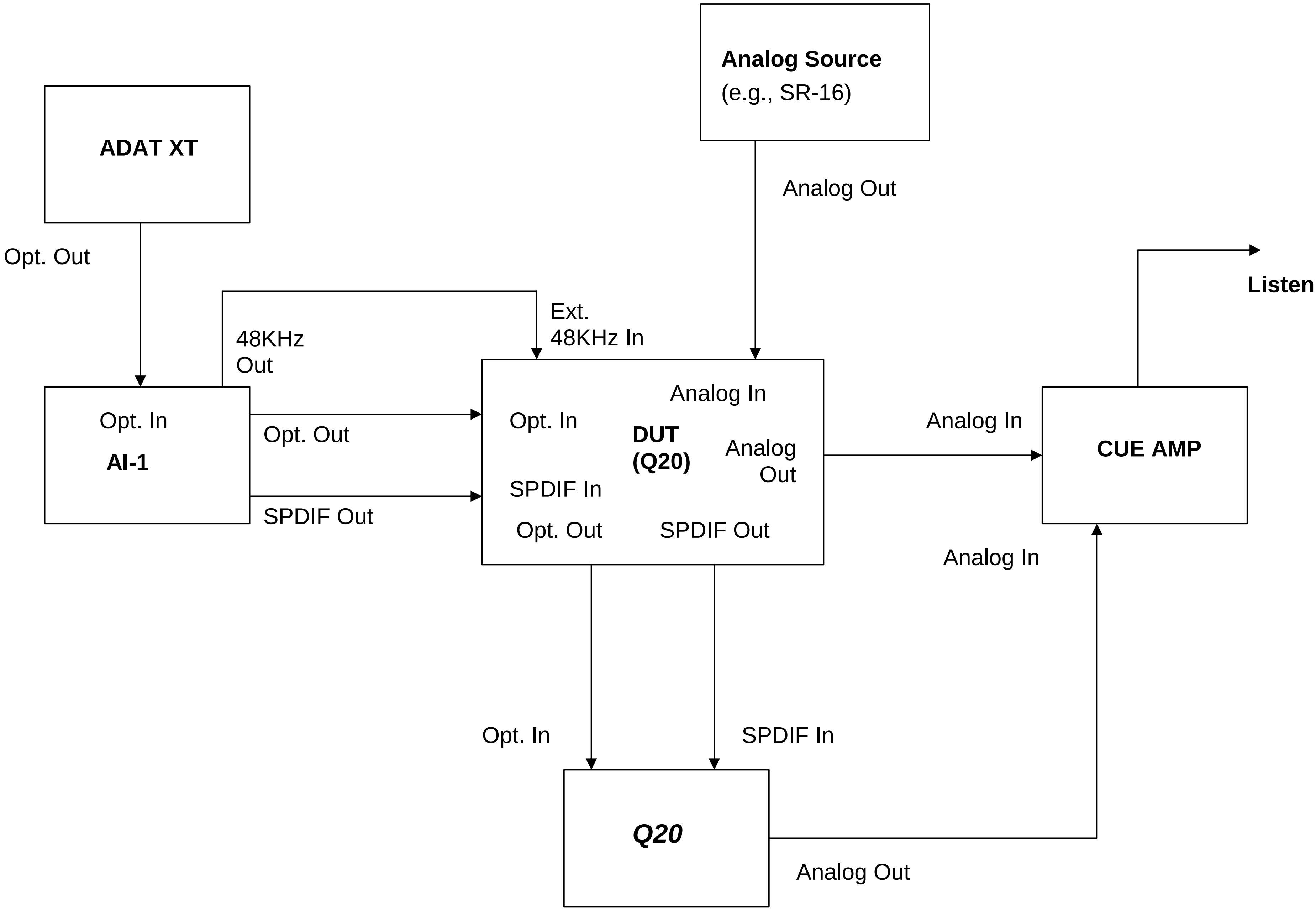
The following table displays the combinations of audio data sources and sample clock sources accepted by the Q20.

INPUT AUDIO SOURCE	SAMPLE CLOCK SOURCE
Optical	Optical
Analog	External 48KHz Internal S/PDIF
S/PDIF	S/PDIF

Regardless of which combination is chosen, output data are present at all audio output jacks (Analog out, Optical out, and S/PDIF out). The attached block diagram shows the physical configuration to test audio. Perform the following input-output combinations for listening to audio.

SOURCE	CLOCK	OUTPUT TO LISTEN TO
Analog	Internal clock	Analog out of DUT
Analog	External 48KHz from AI-1	Analog out of DUT
Analog	S/PDIF clock	Analog out of DUT
Optical from AI-1	Default to optical	Optical out of DUT to 2nd Q20. Listen to analog out of 2nd Q20.
S/PDIF from AI-1	Default to S/PDIF	S/PDIF out of DUT to 2nd Q20. Listen to analog out of 2nd Q20.

(DUT = Device under test.)


Analog Source
(e.g., SR-16)
ADAT XT
Analog Out
Opt. Out
Listen
Ext.
48KHz In
48KHz
Out
Analog In
Opt. In
Opt. In
Analog In
DUT
(Q20)
Analog
Out
CUE AMP
Opt. Out
AI-1
SPDIF In
SPDIF Out
Opt. Out
SPDIF Out
Analog In
Opt. In
SPDIF In
Q20
Analog Out